TEXTILE WORLD

A Maclean-Hill Publication — MARCH • 1951

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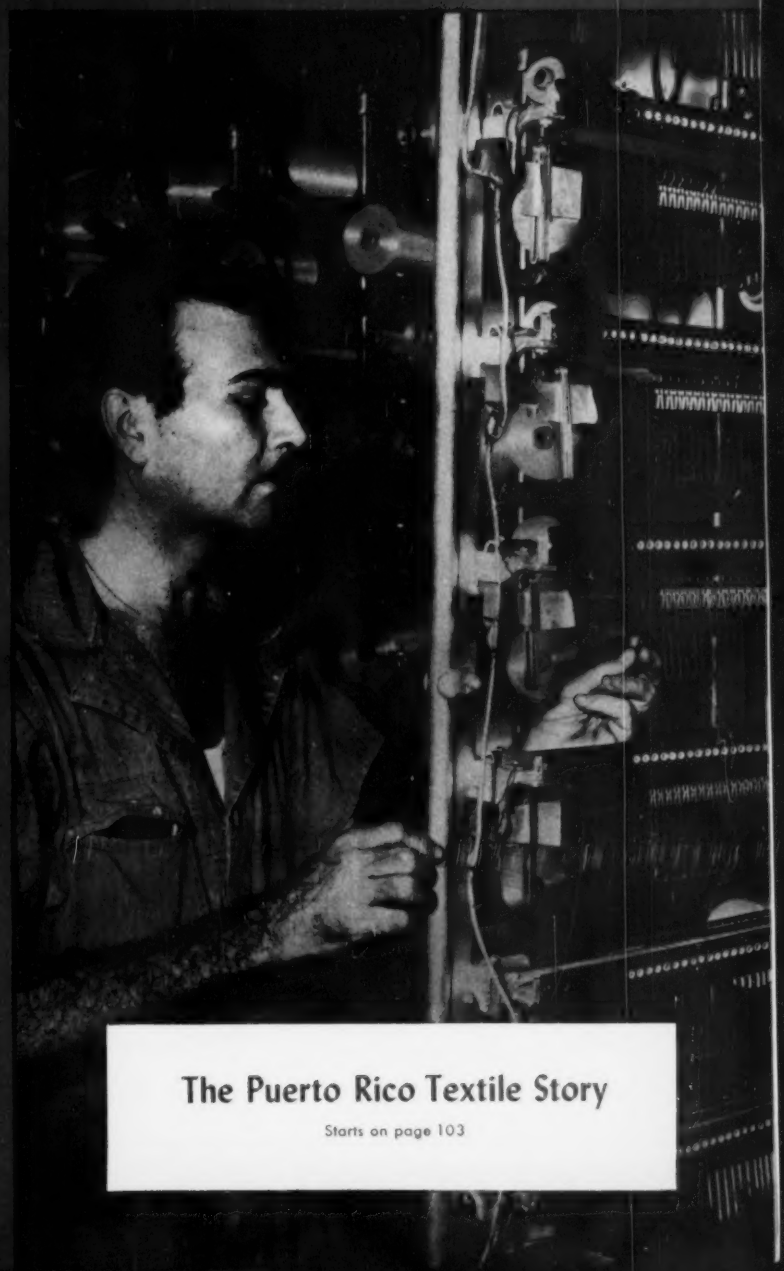

The Puerto Rico Textile Story

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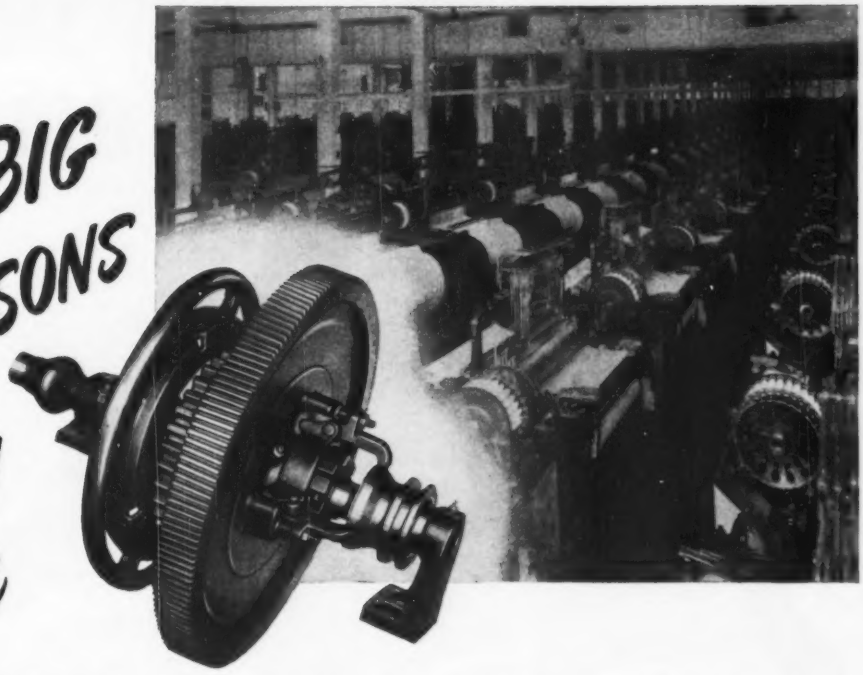

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THE *Long-Range* VIEW

How Are Your Labor Relations?

Everyone has heard the old crack that medicine is to give, not take. It is astonishing how widely the same attitude prevails in the textile industry toward personal improvement.

Almost every key man in the industry will tell you that education, information, and self-improvement are wonderful. Unfortunately, some of the key men also say that they wish *the men under them* would go for these things more!

Back in the days when the early Roosevelt administrations set mills to seeking ways to "get along better with the help," courses, lectures, books, and personnel services were paid for by a very large number of mills. All these sources of self-improvement were intended for "the men under me." Even now, in talking with mill men about TEXTILE WORLD, we occasionally hear the remark, "It's a fine source of information. I wish my men would use it more."

Of course, time is limited. No mill man has enough *time to do all that should be done, read all that should* be read, or hear all that should be heard. Lack of time, though, is a pitifully weak excuse for ducking what should be every mill man's primary responsibility: self-improvement.

It goes without saying that all top men in mills and all top men in departments of the mills wish they had stronger staffs. Overseers need stronger foremen; superintendents need stronger overseers; managers and presidents need stronger superintendents. It is admirable that all these mill men recognize the weaknesses of the men under them. It's fine too that they wish *their subordinates would constantly try to improve.*

But how seriously do they tackle the problems of (1) improving themselves and (2) helping their subordinates to improve?

The basic policies and practices followed in one mill and those followed in any other mill are quite similar. There are small differences, of course, but seldom are the differences vital.

Real differences show up, though, when you begin to probe the personnel and look into labor relations. One mill has stormy labor relations. Another mill in the same area or even in the same town has undisturbed labor relations. One mill may have an alert, capable staff; another may have dull-eyed, inefficient key men.

What causes such differences?

Everyone knows the answer: topside.

The head man of a mill or a mill department is a big man to the people under him. Probably no other individual has as much influence on the lives of a subordinate and his family. If he tries to improve himself and to influence his subordinates toward improvement, the men under him will improve. On the other hand, if he just tries to give the medicine instead of taking some of it too, he's wasting his time.

One of the most short-sighted policies we've run into is that of purposely and actively keeping information from key men in the mill. We know of two large and important mills that attempt to do that. Their reasoning is, "We'll tell 'em what we want 'em to know."

Besides being stupid, that policy is dictatorial. These same two mills howl loud and long at any new government control. The top men personally damn the *government for withholding information or coloring* news.

Such instances as these are sad commentaries on the caliber of some of our key figures. If we were asked what is the prime need of the textile industry, our answer would certainly be that we need to rid ourselves of these dictatorial-minded small men in big jobs. They are a disgrace to a magnificent industry.

Actually, self-improvement is a habit. The more it is practiced, the easier and speedier it is.

Take TEXTILE WORLD, for example. The average issue has a little over 300 pages of information in it. Every page is of direct interest to mill men. It would take only a few minutes a month for the busiest executive or the hardest working overseer to look through 300 pages and pick out what could be of use to him and the men under him. If a mill president checked an article or an ad and called a superintendent's attention to it, would the superintendent read it? You bet he would, no matter how busy he was. And the effect would be stimulating. The alertness would go all the way down the line.

So in the end the real question of staff strength and labor relations is: Who and what is the head man?

How is your staff, and how are your labor relations?

J. M. Thomas

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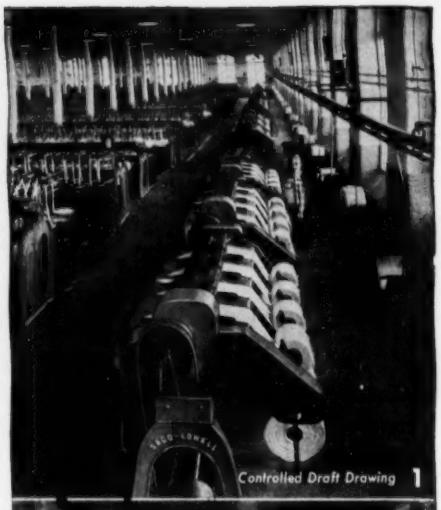

Controlled Draft Drawing 1

FS-2 Roving 2

5 Spinning with Shaw Drafting Unit Assembly

Warp 4 Spinning

New Era Spindles on Warp Spinning 3

PHOTOS: Nos. 1 and 3, Pelzer Mills; Nos. 2 and 5, Dominion Textile Company, Limited; No. 4, Pacolet Manufacturing Company.

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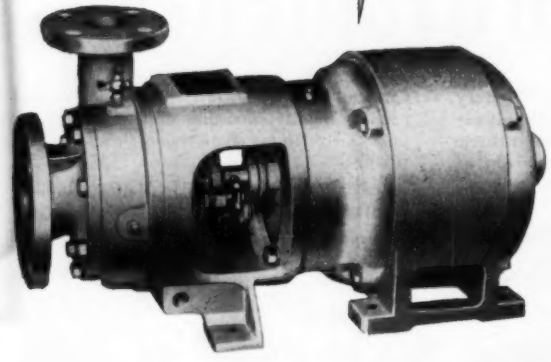

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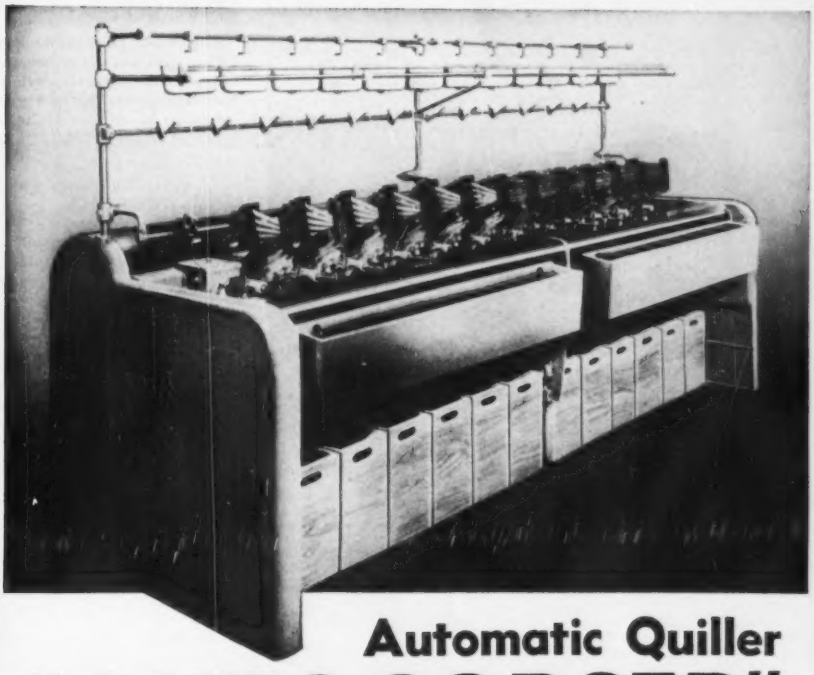

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An alkyl aryl sulfonate detergent . . . of high purity . . . stable in acid and alkali . . . outstanding detergent and wetting properties.

FREE! New 1951 Handy Soap Buying Guide. Tells you the right soap for every purpose! See your C.P.P. representative, or write to our Industrial Department.

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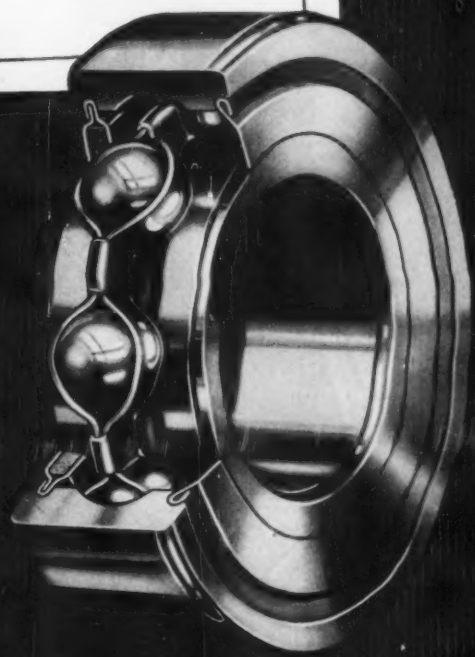
Freedom from Care

WITH NEW DEPARTURE BEARINGS



The concept of
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The lubricated-for-life
ball bearing. Ask for it.

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174

Fiber Forethought

For nylon . . . for rayon

Acetate Division · Nylon Division · Rayon Division

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You can't have a
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unless you start with a
first-class fiber.

Top designers
and ready-to-wear makers
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count fibers as important
as color, fabric and design.

Buyers who prevent trouble
before it starts
are fussy about fibers.

So fussy they frequently
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or acetate rayon
or viscose rayon

say:

"Here are fibers we can count on—
FIBERS BY DU PONT!"

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

...for fibers to come...look to DU PONT!

—Rayon Department, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware

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ESTABLISHED 1840

SANDOZ PRESENTS *The color achievement of the month*

Cloud Grey ...BY MOHAWK

That most fleeting of substances — the cloud — belies its own tendency when representing one of the high-fashion colors used for Mohawk's Grosvenor pattern.

For colors such as Cloud Grey, Mohawk Carpet Mills, Inc., demands utmost resistance to fading. And that is why Mohawk includes Sandoz among its suppliers.

Such Sandoz colors as the following are widely used by carpet mills because they are exceptionally level-dyeing even in light shades, highly resistant to color change during mill processing, and as impervious to light, wear and cleaning as ever a color could be:

BRILLIANT ALIZARINE LIGHT BLUE 3F

XYLENE FAST RED 6BL

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XYLENE LIGHT YELLOW 3G

And for *any* chrome, acid or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you see in these Sandoz advertisements.

DIRECT-DYE COTTON AND RAYON WITH CONFIDENCE IN WASH FASTNESS!

New Sandoz CUPROFIX colors and after-treatment give fastness to washing, light, etc., that formerly required more expensive vat dyeing. Write for booklet on CUPROFIX, already adopted by dozens of mills.

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SND *thinks ahead with textiles*

Inspect in the Singles Ply without Doubling

—when you package your plied yarn on the Universal-Atwood "double-play" combination.

The most efficient method of processing plied yarn is to wind direct from spinning frame bobbins, inspecting the yarn in the singles . . . then ply from cones to large twister bobbins on the ring twister equipped with single end stop motions. This eliminates doubling . . . all work is done at high speed . . . twisting efficiency is improved . . . waste reduced . . . and much better plied yarn is produced.

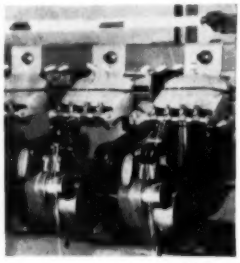
SINGLE END CONING BEFORE TWISTING REMOVES IMPERFECTIONS

On the Universal Roto-Coner*, spun rayons, spun nylons, cottons, worsteds and blends are wound at high speed, while efficient slub catchers — uniformly set and *locked* in position—remove slubs and other imperfections in the singles. The large cones are then used as overend supply for the ring twister.

SINGLE END STOP MOTIONS ELIMINATE DROP PLY

On the Atwood Model 10 Ring Twister, there is an automatic stop motion for each end in the ply. It is located ***above the feed rolls***. Whenever a break or runout occurs, the spindle and feed rolls stop *instantly* and the end is caught before it reaches the feed rolls. Thus—drop ply *cannot* get into the package; nor can roller laps occur. Also—ends are tied in the singles ***before*** twist is inserted, resulting in smaller, less troublesome knots.

*Reg. U. S. Pat. Off.



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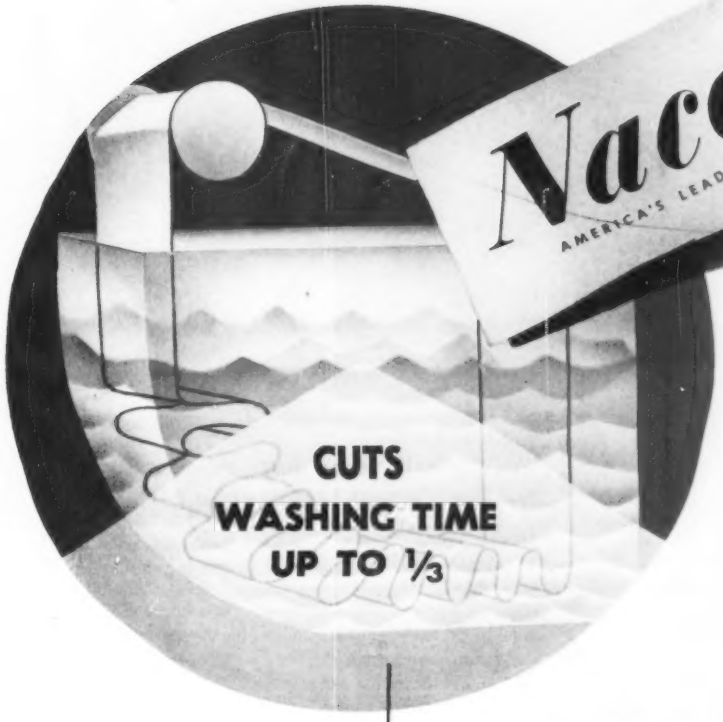
Agents in every principal textile center throughout the world

Winding and Twisting Machinery for Natural and Synthetic Yarns

ROTO-CONER* ***the textile winder with the rotary traverse*** | **MODEL 10** ***automatic stop motion for each end and ply***

for faster washing after fulling add...



- *Replace:* 25%-30% of fulling soap with NACCONOL.
- *Results:* Washing costs cut 10% to 20%. "Sweet," odorless, cleaner goods.
- In almost every wet-processing step, NACCONOL helps to speed up operations, cut costs by conserving other supplies, and improve product quality. Many imitations have been offered but NACCONOL is still *America's Leading Synthetic Detergent.*

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"No," shot back the drawing superintendent,
"your spindle speed's too high!"

Maybe they've been talking to different salesmen. . . . We at Atkinson, Haserick have no axe to grind. We engineer complete installations, from opening to spinning and can do much to integrate all your machinery, assisting you in obtaining evener rovings *and* maximum spinning speeds. May we be of service to you Mr. Spinning Superintendent, and to you, Mr. Drawing Superintendent?

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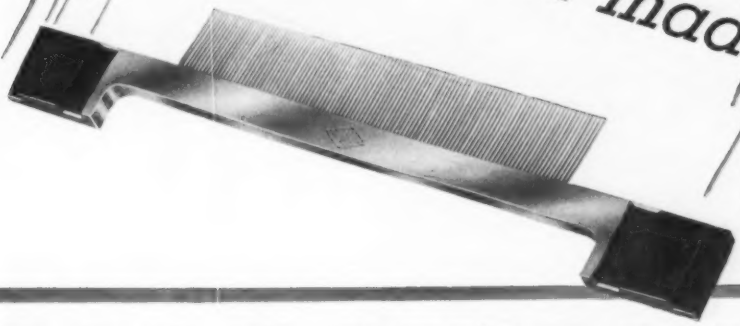
the toughest faller made!



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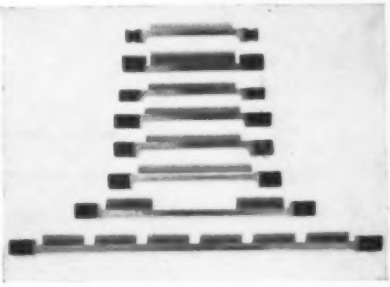
Keeps Gill Boxes Running



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The patented Counter Flow- Air Circulating System delivers a cool, evenly dried, lofty wool with low steam consumption. *Aireflow's* streamlining, inside and out, keeps maintenance low and allows for easy accessibility. May we send you more data on drying wool, cotton, flax, rags or any similar materials?

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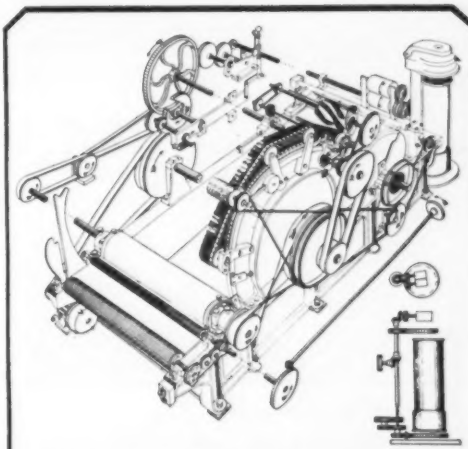
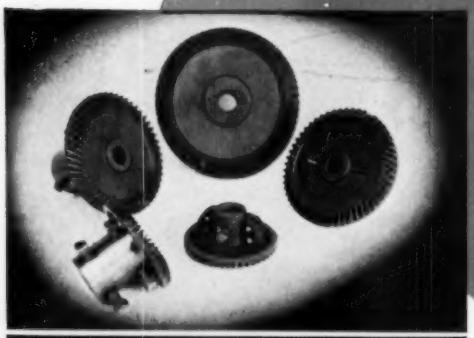
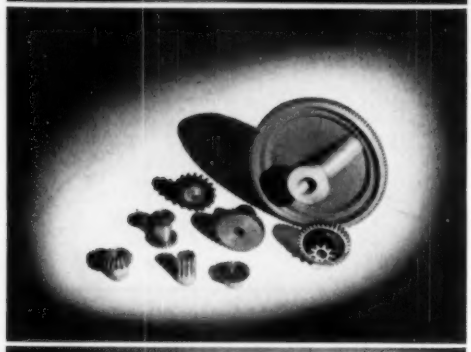


STANDARD SPECIFICATIONS: 40" wide . . . Clothing for your requirements . . . Dish feed plate with fluted steel roller 2¼" dia. . . . Licker-in 9½" dia. covered with inserted saw-tooth wire-8 starts, 36 points per sq. in. . . . Ball bearings to licker-in pedestals . . . Cylinder 50" dia. . . . 106 flats 1⅜" broad . . . Improved flat grinding apparatus for grinding wire and flats from working surface . . . Improved front driving arrangement to flats . . . Doffer 27" dia. . . . Improved fly doffing comb. . . . Calender rolls 4" dia. . . . Coiler and can motions for sliver cans 36" long and 12" or 14" internal dia. . . . Machine cut gears and bevels throughout . . . Strap guide motion with handle bar . . . Pickford's locking motion with patented arrangement to obviate removal of strap fork during cylinder grinding . . . Drive to your requirements . . . Draft constant from lap roller to coiler calenders in the standard model may be 1680 or 2240 as required.





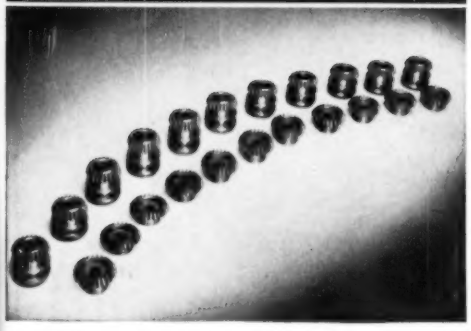


Plate and Coupling Gears
Card Coiler Gears
Bobbin and Spindle Gears

PRECISION MADE

Gear manufacture is not a simple foundry casting problem. Demands for long life—superior performance—efficient service, call for precise engineering in the process.

Gears by Southern States give longer, smoother, more efficient operation because they fit accurately, mesh easily, reduce chatter and vibration. This superior performance of Southern States machine-molded cast-tooth gears and precision-machined cut-tooth gears is achieved through modern metallurgical and foundry practices to assure uniformity of specifications. Accurate machining and rigid inspection assure maximum operating efficiency. Southern States products are guaranteed by an experience gained from thirty years of service to many of the South's leading textile mills.

Southern States Bobbin and Spindle gears, Plate and Coupling gears, and Card Coiler gears to fit all frames. Submit samples, drawings or specifications for quotations.

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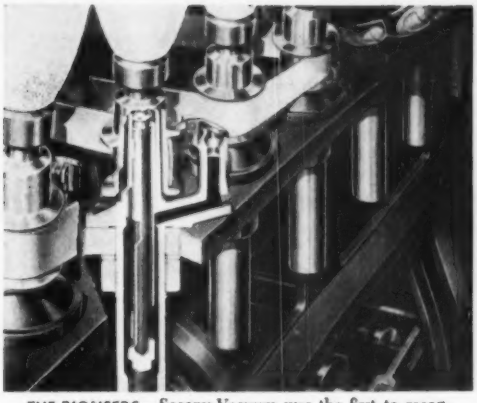
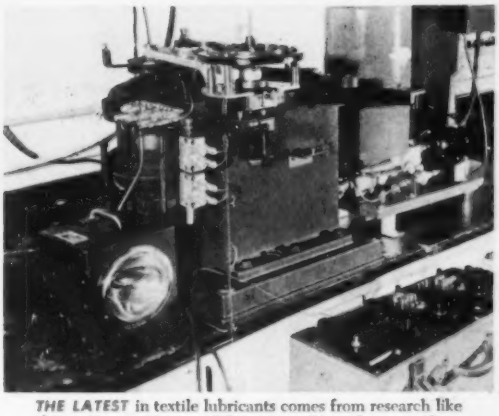
Largest Manufacturer of Cast-Tooth and Cut-Tooth Gears in the South



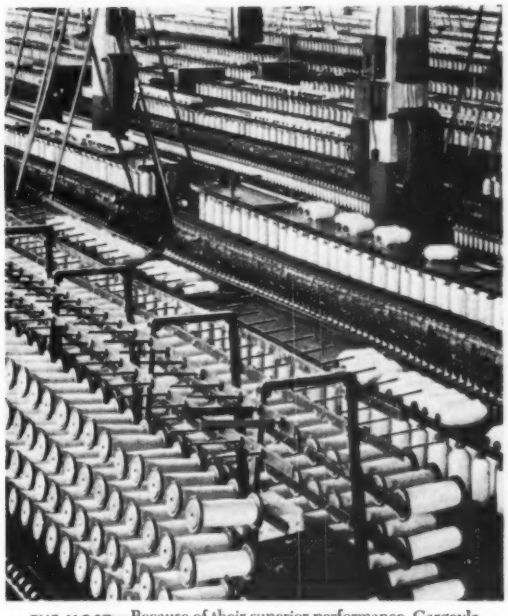
THE PIONEERS—Socony-Vacuum was the first to recognize the need for *specialized* textile lubricants. In fact, today's high-speed spindles were made possible largely through the development of low viscosity *spindle* oils by Socony-Vacuum at the turn of the century!



THE LATEST in textile lubricants comes from research like this in Socony-Vacuum laboratories. Here, for example, a twister ring tester is used to develop new oils and greases to meet conditions in the newest twister rings.

FIRST IN TEXTILES

with the Pioneers, the Latest, the Most!



THE MOST—Because of their superior performance, Gargoyle lubricants are preferred throughout the industry. Proof? . . . More spindles and more textile machinery of all kinds are lubricated by Socony-Vacuum than by any other oil company!

Why Accept Anything Less?

You can't contradict facts—and the fact is that more textile machinery of all kinds in the U.S. is lubricated by Socony-Vacuum than by any other oil company! The reason is clear . . .

Over the years, Gargoyle lubricants have proved their ability—in mills of every type and size—to minimize friction losses, cut maintenance costs, assure more continuous production of first-quality goods. They are backed by 85 years of lubrication experience—are constantly improved by research.

Why accept anything less for *your* mill?

SOCONY-VACUUM

GARGOYLE Lubricants

SOCONY-VACUUM

Correct Lubrication

WORLD'S GREATEST LUBRICATION KNOWLEDGE AND ENGINEERING SERVICE

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates: MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

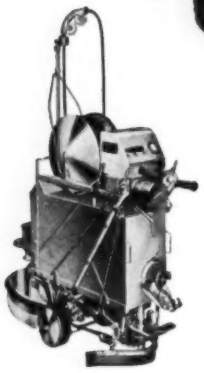
NEW SCRUBBER-VAC

Cuts Cleaning Time 2/3

FOR SMALL-AREA MILLS

- Specially designed for buildings with 2,000 to 15,000 sq. ft. of floor space
- Applies the cleanser, scrubs, rinses, and picks up in ONE operation
- Also handles the dry work — steel-wooling, polishing, et cetera
- Can be leased or purchased (leasing budgets cleaning expense)

● Now the labor-saving advantages of *combination-machine-scrubbing* are available to small as well as larger mills. The *new 418P Finnell Scrubber-Vac*, for small-area buildings with 2,000 to 15,000 sq. ft. of floor space, cleans floors in *approximately one-third the time* required with a conventional 15 or 18-inch scrubber-polisher using separate equipment for picking up. A *Finnell Scrubber-Vac* speeds cleaning by handling four operations in one! It applies the cleanser, scrubs, rinses if required, and picks up (damp-dries the floor) — all in a single operation.



Of narrow design, the *new 418P Scrubber-Vac* also meets the need in larger mills for a combination machine that can be used in congested areas, narrow aisles, and weave room alleys. All the refinements of *Finnell's* larger combination machines are embodied in this smaller unit (18-inch brush ring). Has new type of water valve that *assures* uniform flow of water . . . powerful vacuum for efficient pickup (performs *quietly*) . . . a *Finnell-developed* trouble-free clutch . . . self-winding cable reel . . . improved waterproof wiring and minimum electrical connections, simplifying the cleaning of the machine . . . G. E. Motors and Timken Bearings. The machine is self-propelled — operator merely *guides* it. Supplied with or without powder dispenser. Incidentally, it's good to know that when you choose *Finnell Equipment*, a *Finnell* man is readily available to help train your maintenance operators in its proper use.

SEE IT IN ACTION ON YOUR OWN FLOORS!

Find out what *you* would save with a *Finnell Scrubber-Vac*. *Finnell* makes several models and sizes. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1903 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

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NOW AVAILABLE IN U. S. AND CANADA

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ESTABLISHED 1795

NEW RING SPINNING FRAME

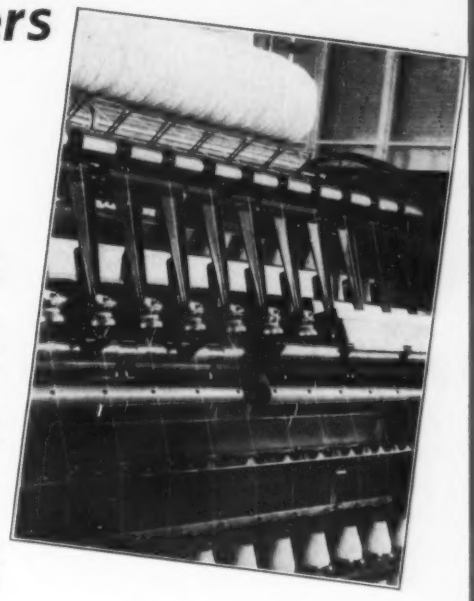
FOR WOOLEN YARNS

No pipe cleaners

NEEDED TO INTRODUCE
SLIVER INTO SPECIAL

WIDE BORE
TWIST TUBES

• *and many other features* •



Needle trumpet in false twist tube carries even the shortest fibers practically to front roll nip; this reduces yarn breakage to a great extent.

Drafting arrangement inclined at 70° assuring straight and unbroken line of flow of material from feed rolls to thread guides; this creates a faultless fiber control for the highest quality yarns.

Constant balloon owing to moving spindle rail, results in highest uniformity of yarn tension during spinning and produces a better yarn.

Stepless variation of roving tension greatly facilitates attendance.

Tachometers for spindle speed and front roller delivery. These two tachometers are built into the head stock of the frame for easy supervision of production.

Central lubrication to all necessary moving parts in the head-stock.

Central lubrication to all rings through a continuous wick trough running the entire length of the frame.

Simplified change from S to Z twist.

Pneumatic suction device for taking up broken ends.

Roller bearing spindles, and automatic underwinding and stopping motion when bobbins are full are but a few more highlights of this most modern woolen ring spinning frame.

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We offer you the services of our Pension Trust Division in the planning of your pension system. We shall be glad to estimate the cost of a pension plan for your company or to discuss with you any pension problem you may have. No obligation whatever.

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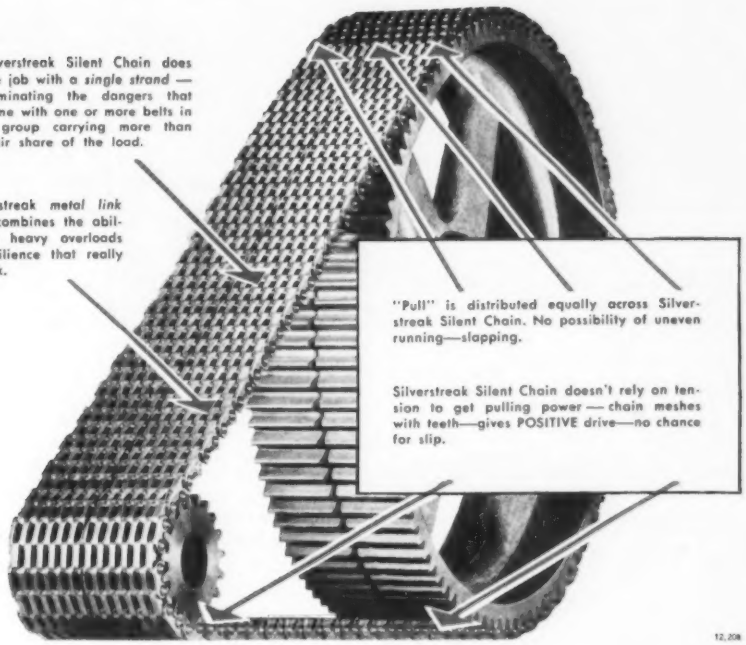
Silverstreak Silent Chain does the job with a *single strand* — eliminating the dangers that come with one or more belts in a group carrying more than their share of the load.
Husky Silverstreak *metal link* construction combines the ability to carry heavy overloads with the resilience that really absorbs shock.
"Pull" is distributed equally across Silverstreak Silent Chain. No possibility of uneven running—slapping.
Silverstreak Silent Chain doesn't rely on tension to get pulling power — chain meshes with teeth—gives POSITIVE drive—no chance for slip.
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Get Full RPM Transmission With LINK-BELT Silverstreak Silent Chain Drives

Yes, get the amazing, trouble-free efficiency of 98.2%. A standard of operation that continues throughout the long, long life of the drive. More than this — every rating and design is backed by a record of *proven performance*. And every chain is engineered for the job. You conserve space, too — for Link-Belt Silverstreak Silent Chain Drives operate efficiently on short centers. Ratios as high as 10 to 1 are commonly used.

Little wonder, then, that so many concerns to whom top operation efficiency and rugged dependability are a must, standardize with Link-Belt Silverstreak Silent Chain Drives.

LINK-BELT COMPANY, Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Johannesburg. Offices in principal cities.

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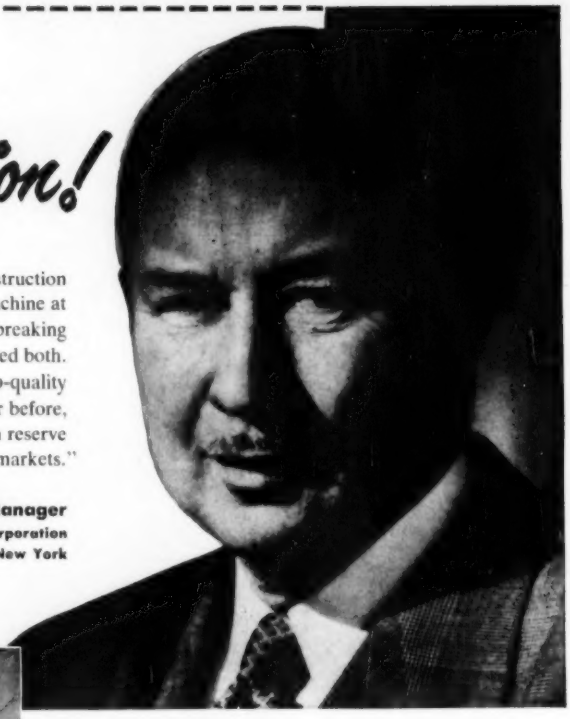
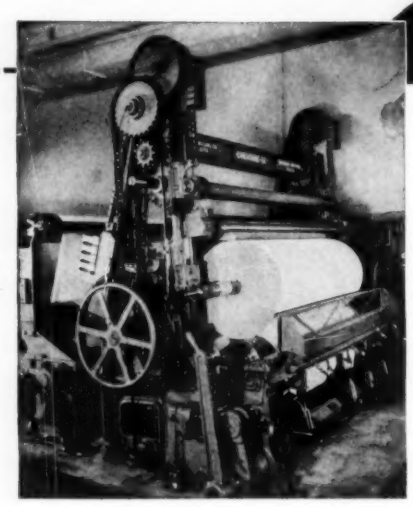
SILVERSTREAK SILENT CHAIN DRIVES

They emphasize *production!*



"WHEN WE WERE PLANNING construction of our revolutionary new coating machine at Johnson City, N. Y., we asked for record-breaking capacity, and *reserve capacity*. We achieved both. We're producing and converting top-quality sensitized papers faster than ever before, and we still have plenty of capacity in reserve to meet new demands in expanding markets."

JAMES FORRESTAL, General Manager
OZALID, Division of GA&F Corporation
Johnson City, New York



The Camachine 14 at Ozalid is equipped with pneumatic constant web tension unwind, electronic side register control and pneumatic slitter units. Speed rated at 1800 f. p. m. Maximum rewound roll diameter is 38".

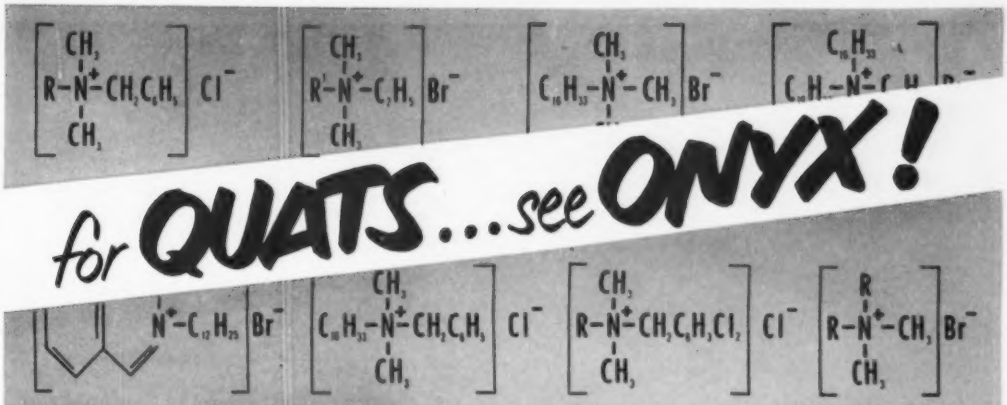
OZALID's giant paper sensitizing machine, largest and fastest in the world, is capable of coating and drying 249,000 feet of 79" web per eight-hour day. The 79" web is converted to standard width rolls on a Camachine Type 14 Slitter-Rewinder. Single shift operation of the Camachine handles the complete output of the coating machine, despite overtime scheduling of the coating operation. Camachine has substantially increased the Ozalid production potential over roll converting equipment formerly used.

Its reputation for dependable, trouble-free performance at record-breaking speeds has made Camachine the *one* outstanding name in roll production equipment. No matter what material you produce or convert in roll form, Camachine engineers will be pleased to consult with you regarding faster production and improved roll quality.

Cameron Machine Company • 61 Poplar St. • Brooklyn 2, N.Y.

They can depend on Camachine

AA-231



for QUATS...see ONYX!

Onyx Quaternaries

All Onyx Quaternary Ammonium Compounds now in extensive industrial use have been tested for toxicity—not only on a lethal dose basis, but on a long term chronic toxicity basis. All these tests have shown these compounds to be completely non-toxic at all recommended use-dilutions. Tests have also been made which prove that these compounds do not irritate or sensitize the skin at use-dilutions.

These salts are all cationic. They are therefore compatible with non-ionic and cationic surface-active agents. They are not compatible with soaps or other anionic materials. They are soluble or miscible with water in all proportions. Onyx Quaternaries are stable chemical compounds, and have long shelf life, without deterioration. Rigid manufacturing control insures uniformity of chemical constitution.

Onyx has been a leading factor in the production of quaternary ammonium compounds since the days when these cationic germicides were first commercially used. Today we produce a greater number of these compounds than any other manufacturer.

Some of the quaternaries we make are of interest to research laboratories and development departments searching for specific germicidal, algaecidal and fungicidal or deodorizing action. Others are available in virtually unlimited quantities, and have wide industrial application. Here are some of the latter group:

BTC*

Alkyl dimethyl benzyl ammonium chloride. The most widely used cationic germicide at the present time. Sold in 50% aqueous solution to disinfectant and germicide manufacturers for dilution and/or incorporation in their own products. The safest and most effective bactericide and bacteriostatic agent available today. Also acts as a powerful deodorant.

TETROSAN

Alkyl dimethyl 3,4 dichloro benzyl ammonium chloride, plus alkenyl dimethyl ethyl ammonium bromide. Sold in 60% aqueous solution. Tetrosan is in extensive use as a disinfecting, deodorizing and preventive antiseptic in veterinary and live stock medicines. It is also used in pharmaceuticals for topical applications where antisepsis is desired.

ISOTHAN Q15*

Lauryl isoquinolinium bromide. Sold in 20% aqueous solution. Isothan Q15 is an excellent fungicide. It is widely used in the formulation of compounds for use in the control of athlete's foot and dandruff. It is also used for various other fungicidal purposes.

ONYXIDE*

Alkenyl dimethyl ethyl ammonium bromide. Sold as a 75% concentrate in isopropanol or propylene glycol. Onyxide is the most effective algaecide now available. It is in very wide use for the control of algae in swimming pools, cooling water, air-conditioning systems and similar applications.

*Trade Mark Reg. U.S. Pat. Off.

If you are interested in any one of these particular "quats," please ask for data. Onyx BTC is covered in a very thorough technical handbook which also outlines the major characteristics of the quaternaries.

onyx

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INDUSTRIAL DIVISION
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In Canada: Onyx Oil & Chemical Co., Ltd., Montreal, Toronto, St. Johns, Que. *For Export: Onyx International, Jersey City 2, N. J.*

Save Wear and Power with Sinclair Lily White Oils

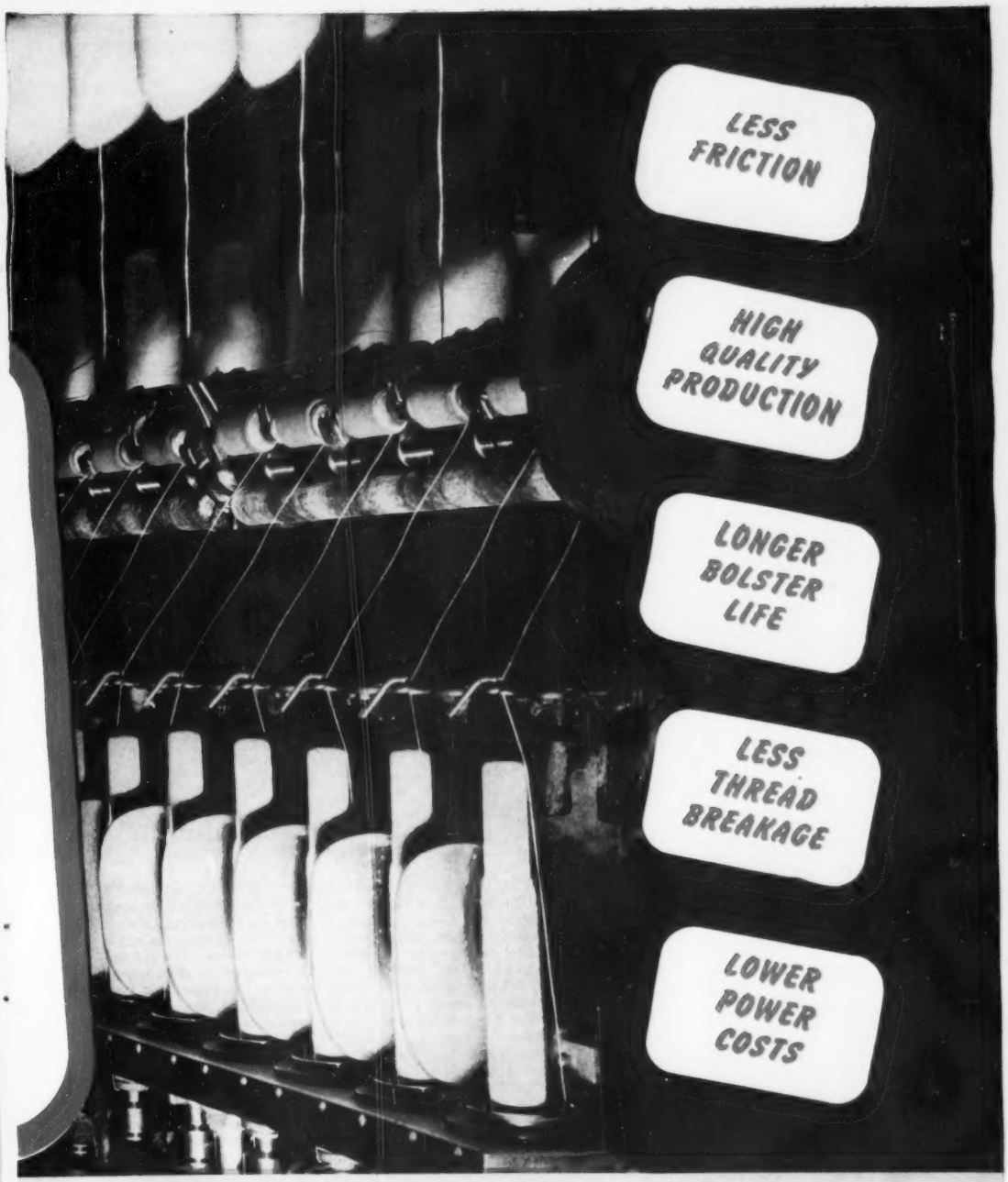
Mill records show bolster wear may be cut as much as two-thirds by using Sinclair Lily White Oils. This is an important saving. For not only does less bolster wear mean less spindle wobble and fewer replacements but, even more important, it signifies less spindle frictional drag.

The drag saved on each spindle might seem trifling. But multiplied by the large number of spindles in your mill, it adds up to a big saving in power load and cost.

Improved Sinclair Lily White Oils, AX, BX, and CX are specially compounded for low friction loss and reduced power demand. They wash out readily. They are also effective rust preventives. To save wear and power, use Sinclair Lily White Oils.

SINCLAIR TEXTILE

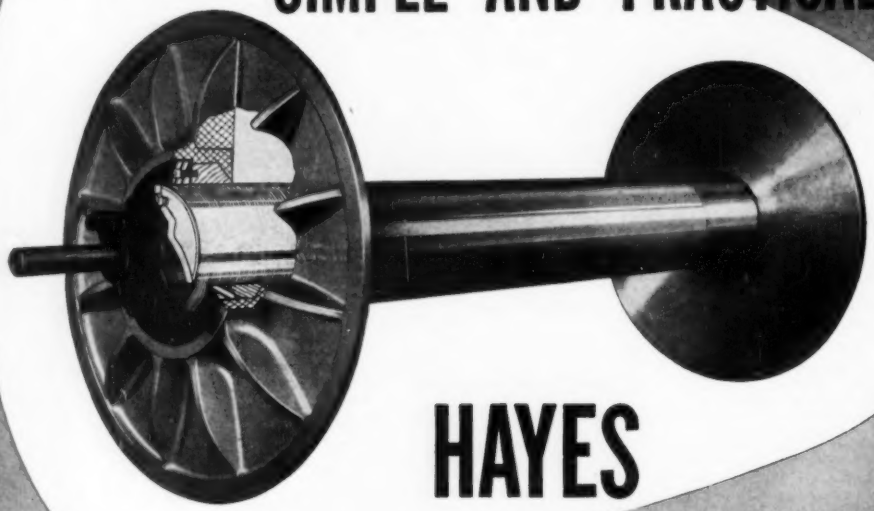
For more information, write direct or use Reader Service post card.



LUBRICANTS

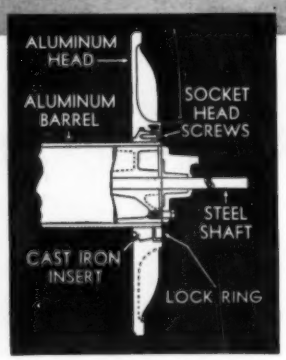
Your nearest supplier of Sinclair products will gladly arrange for lubrication counsel, or write to Sinclair Refining Company, 630 Fifth Avenue, New York 20, N. Y.

new! SIMPLE AND PRACTICAL!



HAYES

ADJUSTABLE LOOM BEAMS



Sectional drawing of New Locking Device — simple — strong — stays put.

NOW, for the first time you can have the most practical, Adjustable Loom Beam yet devised. It is simple, easy to adjust and locks in any position. To secure the head in place, you simply tighten the socket head screws evenly on the locking mechanism. No special tools are required. The new and very simple built-in locking device shown at the left gives you greater head strength, *with no reduction in yarn space.* Here is a New, Adjustable Loom Beam that is strong and sturdy in construction, is accurately made and stays true indefinitely, and of course does not rust. *Yet it is so light in weight that two men can lift it into the slasher with ease!*

NOW, you can have the benefit of years of research, now you can have all the advantages of the conventional adjustable loom beam plus light weight, strength and accuracy never before achieved. Hayes produces Adjustable Loom Beams for all standard looms. Write for Catalog 100, on Hayes Beams. Due to present material curtailments, we may not be able to ship your Beams as quickly as you or we would like. We will however, do our best to fulfill your requirements.

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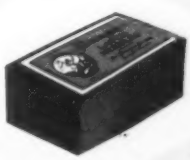

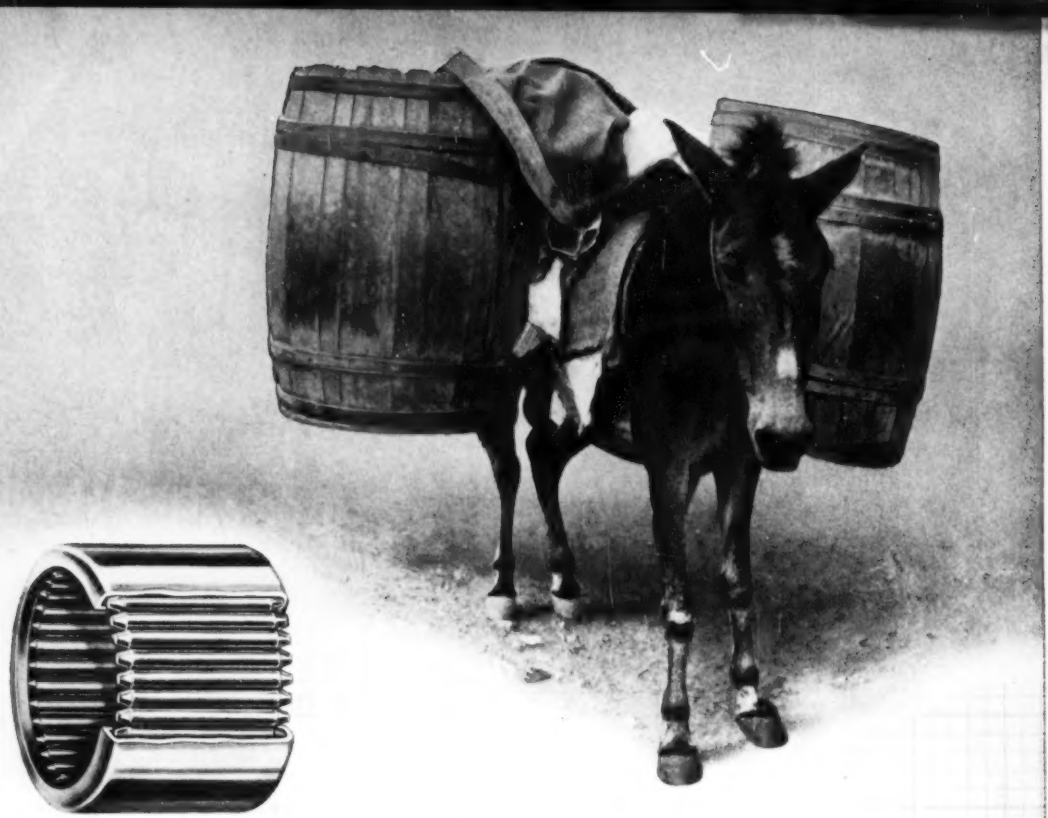

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No other anti-friction bearing of comparable size can equal the radial capacity of Torrington Needle Bearings. A full complement of rollers distributes the load over the largest possible bearing contact surface while holding radial cross-section to a minimum.

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The nation's rapidly expanding defense program will demand from you the fullest use of your productive capacity. In spite of almost certain shortages of skilled labor and raw materials with resulting delays in the procurement of new machinery .. *TOP PRODUCTION* must be maintained

To keep the Whitin machines in your mill operating at peak efficiency . . . *use only*

WHITIN REPAIR PARTS

Around-the-clock schedules at top speed are pretty rough on machinery. Breakdowns are costly. Proper maintenance is a necessity — and proper maintenance implies having replacement parts in stock *before* breakdowns occur.

The Whitin machinery in your mill is scientifically designed, carefully built precision equipment. It must be obvious that satisfactory replacement parts for this machinery can come *only* from Whitin.

Whitin's facilities in both Charlotte and Whitinsville have been expanded and improved to bring you the best in Repair Service.

Our Repair Service is always at your disposal. We hope that you will avail yourself of its many mutual advantages.

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the DIRTIER the better for LAN-O-KLEEN!

DIRT that's really hard to remove . . . that's deeply imbedded in workers' hands . . . that irritates cuts and abrasions—directly affects production figures! Think of the materials your present cleaner won't remove: graphite and metallic dust . . . heavy grime and lubricants . . . even common soil and office dust—no matter how hard you scrub!

LAN-O-KLEEN, the industrial soap powder, is designed for "heavy-duty" dirt removal. A fine corn meal base sponges out the pores . . . while thick suds sweep away surface dirt. As water is added, soothing Lanolin spreads over the skin, leaving hands fresh-feeling and clean as a whistle. Its soothing emollient action won't aggravate cuts and bruises. Further, Lan-O-Kleen and the sturdy Lan-O-Kleen dispenser are a dollar-saving combination—as a West representative can easily demonstrate.

LAN-O-KLEEN the industrial hand cleaner containing LANOLIN

WEST DISINFECTING Company

Show me the hand cleaner that will remove stubborn dirt!

West Disinfecting Company, 42-16 West Street, Long Island City 1, N. Y.
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Gentlemen: I'd like to have a local WEST representative come out and give me a demonstration of Lan-O-Kleen.

Mr. _____ Position _____

Company _____

Address _____

City _____ Zone _____ State _____

11

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Three Reasons Why

JACOBS

PICKER STICK ASSEMBLIES *Last Longer*

JACOBS REINFORCED "Verybest" Check Straps
give 100% performance—*longer!*

With 12½% more wearing surface these check straps conform to the angle of the Picker Stick. Made of select quality hairy or oak leather, they give more gradual checking, less loom shock, save power, and add longer life.

JACOBS Picker Sticks stay "alive"—*longer!*

Made of the finest straight-grained select hickory obtainable, *air-dried at controlled temperatures*, Jacobs Picker Sticks impart that necessary "live" whipping action to the shuttle longer than any other picker stick made.

Save time with less loom fixing

JACOBS REINFORCED "Verybest" Lug Straps can "take it"—*longer!*

Reinforced in vulnerable spots, these Lug Straps offer lower operating costs, less breakage, and longer wear. They are made to operate at high speeds, and soften the extreme impact of modern high speed looms.

Jacobs Loom Necessities manufactured and stocked at both Charlotte, N. C. and Danielson, Conn.

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- from one source of supply
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***THREE PREDICTIONS** about your business can safely be made for 1951 . . .*

▶ You will need a dependable source of chemicals. We offer *more than one* chemical to meet each of the processing operations here listed. "More than one" offers you an important margin of safety.

▶ You will want service – whole-hearted cooperation and prompt deliveries. Our tremendous warehousing facilities assure you of that kind of service.

▶ You may need specialized research facilities – added to your own – to meet new demands, to improve an existing process or to create a new one. On such occasions we invite you to call upon our laboratories in any way we can logically cooperate.

▶ We pledge to our Government and to our Customers – as our share in the *Armament Program* – our every effort to supply the chemicals, to render the service, to cooperate on research projects to the limit.

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IN CANADA: Chemical Developments of Canada Limited, Leaside, Toronto 17

Gulfspin *keeps spindles clean!*

Here's why:

1. Resists formation of sludge

2. Prevents sludge from depositing on spindle surfaces

Spindle blades and bolsters stay clean when they are lubricated with the new Gulfspin.

Here is the important reason! Gulfspin not only has the inherent ability to resist the formation of harmful sludge, but also prevents sludge from depositing. And during periods when oil levels are low, Gulfspin's protective film insures against the formation of rust. Thus the need for costly cleaning of spindles and bolsters is eliminated—parts wipe clean easily.

Gulfspin has excellent oiliness characteristics. It reduces the rate of bolster wear experienced with ordinary oils, insures freedom from spindle wobble.

Gulfspin, unlike conventional spindle oils, does not appreciably increase in viscosity even after extended use. This accounts for reports from users telling of substantial savings in power costs.

See for yourself—on your frames—that this new spindle oil is better in every way. Or write today for copy of a pamphlet on this outstanding new oil.

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FIFTY YEARS OF SERVICE
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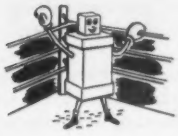

This sturdy lightweight shipping box handles a heavyweight's job!

Nuts and bolts, castings, hardware, metal extrusions, nails, textile yarns and finished goods, and similar heavy and bulky products really give a shipping box a beating. Until this H & D lightweight came along, only "heavyweight" boxes could take such punishment. But with stitched caps on half outer liners that completely eliminate distortion in stacking, this low-cost box takes all the beating a heavy load can hand out. No wonder it cuts packing and freight costs!

For scores of ways to cut shipping costs . . . to lower packing costs . . . and to increase sales through better display, write for H & D's book, "How to Pack It." Hinde & Dauch, 5102 Decatur St., Sandusky, Ohio.

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RESULTS are what count!

Read These Reports By Mill Officials On

Automatic OVERHEAD CLEANING

Taken From Textile Papers

"The cleaner has brought about better working conditions and fewer safety hazards and has been responsible for improved quality production."

"Ceiling cleaner has enabled us to eliminate one card hand from each shift."

"The best investment we have ever made . . . paid for itself in two years. . ."

"Eliminates a great deal of waste and the mill has practically no trouble with pull-backs."

"We think we have cut our gouts about 50%. I might say that at the same time we put in the overhead cleaning, we stopped using compressed air on the spindles and idler pulleys."

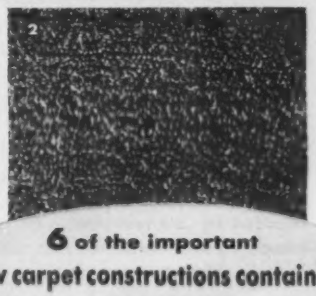
"All I have to say is that if you do not have them and have never seen them, you had better get out and learn about them, because they are really fine things."

An American MonoRail Engineer will be glad to show you how it is better, quicker, and more economical with AMERICAN MONORAIL AUTOMATIC OVERHEAD CLEANING. Write today for catalog.

THE AMERICAN MONORAIL COMPANY

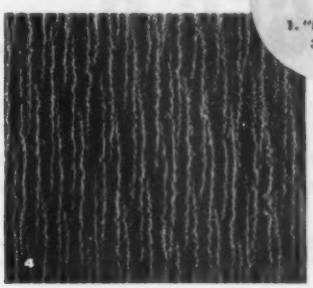
13108 ATHENS AVENUE — CLEVELAND 7, OHIO

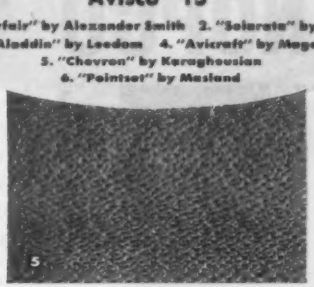
Rayon Reports

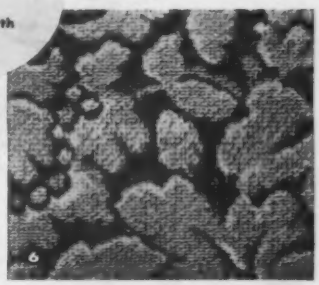


6 of the important new carpet constructions containing Avisco "15"

1. "Mayfair" by Alexander Smith 2. "Solarata" by Firth
3. "Aladdin" by Leedom 4. "Avicraft" by Magee
5. "Chevron" by Karagheusian
6. "Pointset" by Masland







Avisco "15" Staple Extensively Used in Carpet Industry's Spring Offerings

Widespread approval for Avisco "15", the heavy-denier carpet staple introduced last summer, is indicated by the spring offerings of major carpet manufacturers. Blended with wool or in 100% rayon weaves, it is appearing in floor coverings with unusual surface interest, crisp coloring and excellent wearing qualities. These features and the favorable prices are rapidly winning consumer acceptance.

That rayon has found a permanent place for itself in carpeting is borne out by the fact that more and more leading figures in the industry are predicting an ever-increasing role for synthetics in floor coverings. To back this belief they are making vigorous efforts to promote the new type of product to the consumer.

Avisco has joined in the effort by featuring rayon carpets in consumer advertising, and by providing educational material helpful to consumers and retail salespeople. This concerted effort—plus inherent value—forecasts success for rayon carpets.

MAKE USE OF *Avisco* 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

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America's largest producer of rayon

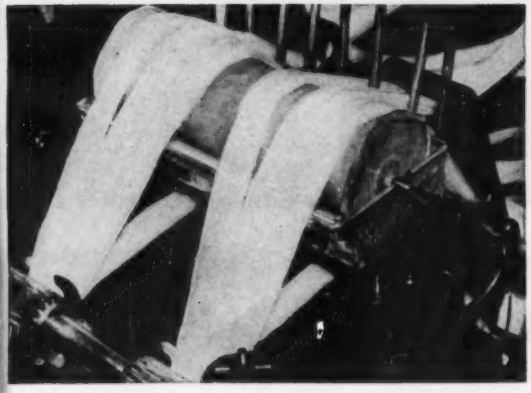
Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.

the FEW extra ¢ents that make a LOT of sense

When it comes to producing worsted yarn, there is always this important question: Should a spinner spend a few more cents than absolutely necessary when processing top, to try and achieve more efficient production and better finished products? In the case of Nopco* 1656-R, the answer is "yes".

Today; the price of top is the highest in history. Thus the few additional cents involved in the purchase of Nopco 1656-R become insignificant in the face of over-all costs. Moreover, the unique advantages afforded by this remarkable oil far outweigh its price differential when compared to alternatives. Just consider:

NOPCO* 1656-R . . .



*Reg. U. S. Pat. Off.

1. ***provides excellent lubrication and eliminates static in worsted sliver. Result: no fly from top treated with this oil—fewer ends down in spinning and winding—much less brush waste;***
2. ***increases the drag, and thereby gives a better draft—resulting in more even and cleaner yarn;***
3. ***scours out with phenomenal ease—actually converting into suds when used with alkali, polyphosphate and water;***
4. ***applies equally to all production systems—American, Bradford or French—and is extremely advantageous on pin drafters.***

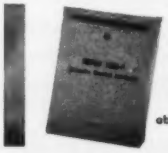
Yes, it will profit you to use Nopco 1656-R wherever you employ a lubricant in your top-processing procedure. And it will profit you to specify Nopco 1656-R, as a number of spinners already do, whenever you purchase oil-combed top. You'll pay a few more cents above "rock bottom" perhaps, but when you examine your finished yarns, you'll know you have produced high quality products with surprising economy.

NOPCO — EVOLVED THRU RESEARCH

NOPCO CHEMICAL COMPANY

HARRISON, NEW JERSEY

Branches: Boston, Chicago, Cedartown, Ga., Richmond, Calif.



Send for your FREE copy of this bulletin giving detailed information about Nopco* 1656-R

For more information, write direct or use Reader Service post card.

Whether you want one worm-gear speed reducer or a thousand, a standard drive or a unit designed to meet special problems, Cleveland can serve you better.

Prompt service on dependable worm-gearing

● For dependable worm-gearing, consult Cleveland—a company which for 38 years has devoted its engineering skill and production facilities exclusively to the manufacture of high grade, precision-built worms and gears.

Cleveland offers a complete line of worm gear sets and speed reducers, including the popular fan-cooled Speedaire—to meet the requirements of any machinery or equipment builder or user for this convenient, right-angle drive.

Our sales representatives, located in major industrial market centers, are ready to sit down with you and discuss your power transmission needs, to help you select correct types and sizes. Our service is prompt.

Write for our latest catalog and give us an idea of your requirements. Your inquiry will receive our careful attention.

The Cleveland Worm & Gear Company, 3268 East 80th Street, Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.

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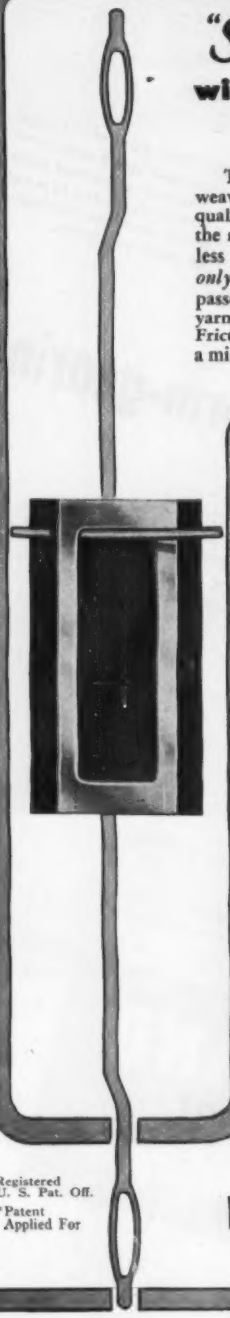
Worm Gear
Speed Reducers

"Slide-tex"* LOOM ACCESSORIES..for Better Weaving



"Slide-tex" FLAT STEEL HEDDLES

with revolutionary new Rectangular Eye!**

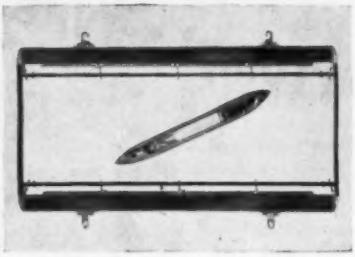
The Smoothest heddle eye ever produced

This new development means greater weaving efficiency . . . improved fabric quality. Revolutionary rectangular eye of the new "Slide-Tex" heddle places much less strain on the yarn because it is the *only* heddle eye through which the yarn passes in a perfectly straight line. The yarn does not cut slots in the heddles. Friction and thread breaks are reduced to a minimum because the rectangular shape of the eye presents a much larger supporting surface to the yarn.

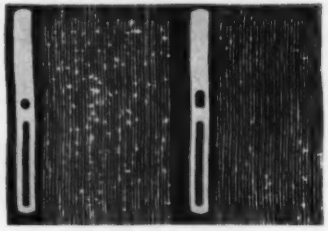
Numerous tests have shown amazing results even when weaving extremely sensitive, low denier, flat and highly twisted acetate rayon. The same advantages are obtainable in the weaving of pure silk, nylon, cellulose, cotton, wool, linen and other fabrics.

"Slide-tex" ALL-METAL HARNESS FRAMES

These "Slide-Tex" precision-built harness frames are light in weight and very strong — made to give you many years of trouble-free service. Plastic wear-strips absorb shock and prevent metal surfaces from rubbing — not affected by humidity. Essential play between heddle and heddle bars is always retained and heddles slide easily from one end of the frame to the other. You can't buy a better harness frame!



"Slide-tex" DROP WIRES



The straight eyelet — a feature of "Slide-Tex" Drop Wires — gives more bearing surface, causes less friction and results in fewer thread breakages. In addition, yarn does not cut slots in the drop wires—something which often happens when droppers with round eyelets are used.

The illustration at left shows a comparative test of two types of drop wires: with straight eyelet and with round eyelet. The yarn was 24 S/1 cotton and the test was carried out by the Swiss Federal Laboratories in St. Gall. (Report No. 3655). The advantages are the same for all types of yarn.

WRITE FOR DETAILED INFORMATION AND LITERATURE

H. J. THEILER CORPORATION

WHITINSVILLE • MASSACHUSETTS

*Registered U. S. Pat. Off.

**Patent Applied For

Gardner-Denver WB Vertical Water-Cooled Compressor.

"That sign's been up seven years already!"

A Gardner-Denver WB Compressor like this was installed in a midwestern plant seven years ago. It has never been touched since—except to change the oil and take up on the water pump packing. The valves have never been examined—even though the compressor saw 24-hour service much of the time.

Your maintenance men can keep "hands off," too, when you choose a Gardner-Denver WB Air Compressor. And a WB saves space as well as maintenance dollars—gives you big air capacity and high efficiency from a small corner of your plant.

Gardner-Denver WB Compressors are available with water tube intercooler, as shown, or with self-contained radiator intercooler for use where good cooling water is scarce. Send today for bulletin WB-10.

SINCE 1859

GARDNER-DENVER

Gardner-Denver Company, Quincy, Illinois

In Canada: Gardner-Denver Company (Canada), Ltd., Toronto, Ontario

THE QUALITY LEADER IN PUMPS, COMPRESSORS AND ROCK DRILLS

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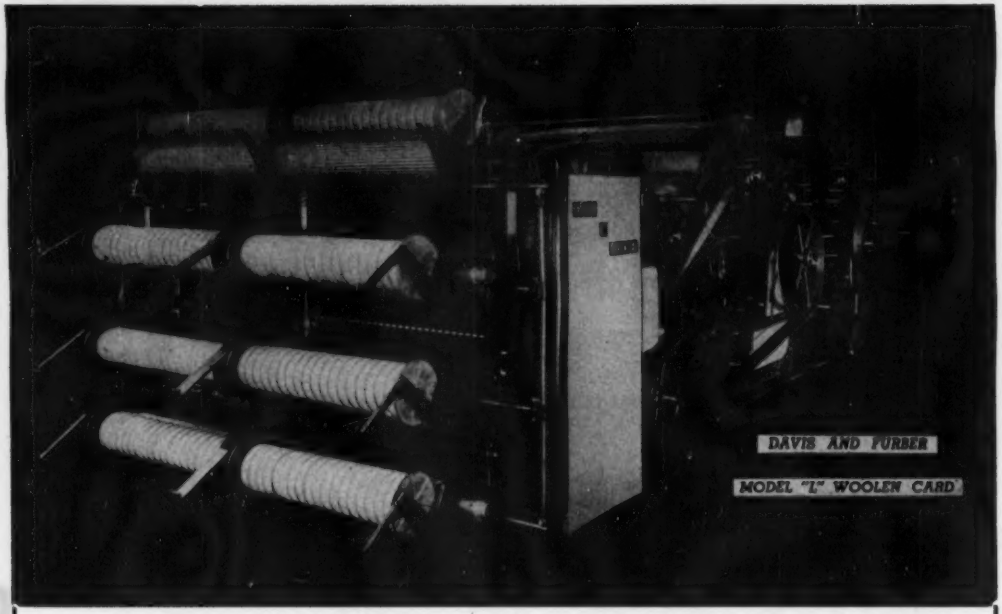


Production + Quality = Profit

Are you troubled by poor yarns which reflect in the quality of your product?

Are you paying more to produce yarn than your competitors?

Are you troubled with constant machinery maintenance problems?

Are your employees jeopardized by unsafe equipment?

And most important:

Are your machines failing to earn the greatest possible profit for you?

Any of these conditions are unnecessary while the services of DAVIS AND FURBER are available.

Starting with the preparation of stock and carrying it through to the finished yarn and even to preparing warps, we build the best machine for every process. Therefore, we can accept the unified responsibility of equipping a mill to produce the highest quality — lowest cost yarns.

One Hundred and Eighteen years of experience and engineering skill make DAVIS AND FURBER best qualified to modernize an ailing yarn department. Our engineers are successfully meeting these problems, constantly.

Don't be plagued by high cost, inferior yarn — it isn't necessary. DAVIS AND FURBER has given many other mills efficient, high quality yarn production. We can do it for you.

Don't Wait—Investigate

DAVIS AND FURBER MACHINE COMPANY

Since 1832

NORTH ANDOVER, MASS.
CHARLOTTE, N. C.
U. S. A.

short turns at high speeds

Condor WHIPCORD ENDLESS BELTS

"I was beginning to think no flat belt could stand up on that drive . . . but now I've found a belt I don't believe any drive can kill!"

Statements like this are typical from users of Condor Whipcord Endless Belts on troublesome drives . . . short centers . . . small pulleys . . . reverse bends . . . high speeds . . .

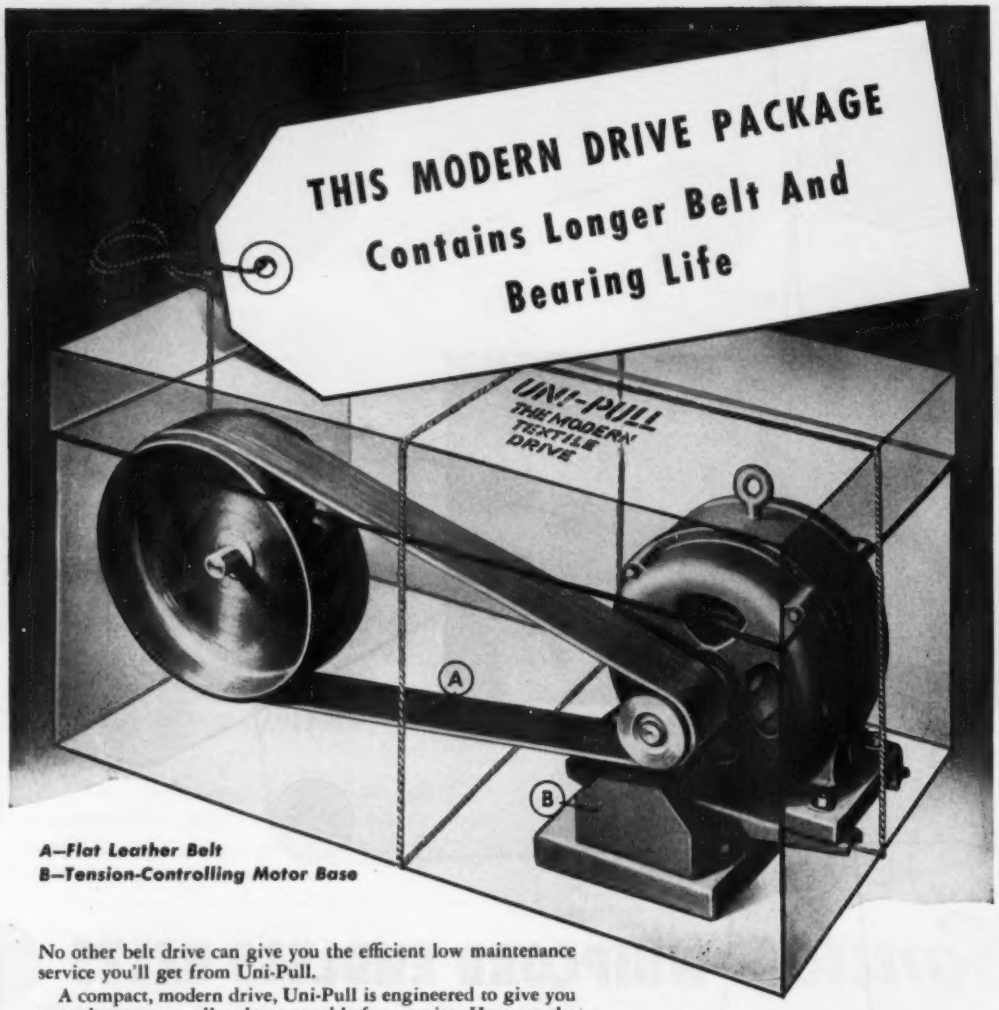
The endless-wound cord is destretched in manufacture to remove inelastic stretch. Cover-end is made inseparable with the Extensible-Tip. These and other advantages are described in Bulletin 6869 D, mailed on request.

This same rugged service is built into R/M hose, V-belts and conveyor belts. Just phone your R/M Distributor.

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.

Manufacturers of Mechanical Rubber Products • Rubber Covered Equipment • Radiator Hose • Fan Belts • Brake Linings • Brake Blocks • Clutch Facings • Packings • Asbestos Textiles • Powdered Metal Products • Abrasive and Diamond Wheels • Bowling Balls



A—Flat Leather Belt
B—Tension-Controlling Motor Base

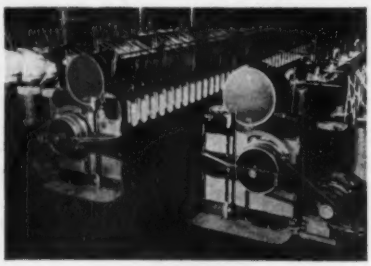
No other belt drive can give you the efficient low maintenance service you'll get from Uni-Pull.

A compact, modern drive, Uni-Pull is engineered to give you smooth starts as well as long, trouble-free service. Here are the two Uni-Pull reasons why.

1. UNIFORM PULL ACROSS THE PULLEYS—The flat leather belt gives you a full, wide, even grip across the pulley faces. Your pulling power is undivided, it can't become uneven. It's impossible for any part of the belt width to loaf and put extra strain on the rest. Furthermore, no substitute material can surpass the strong, lasting pulley grip of good leather belting.

2. UNIFORM PULL AROUND THE PULLEYS — The tension-controlling motor base enables you to predetermine and automatically maintain a belt tension that makes life easier for bearings. It minimizes jerky, end-breaking starts.

Ask your leather belting supplier about modernizing your power transmission with Uni-Pull.

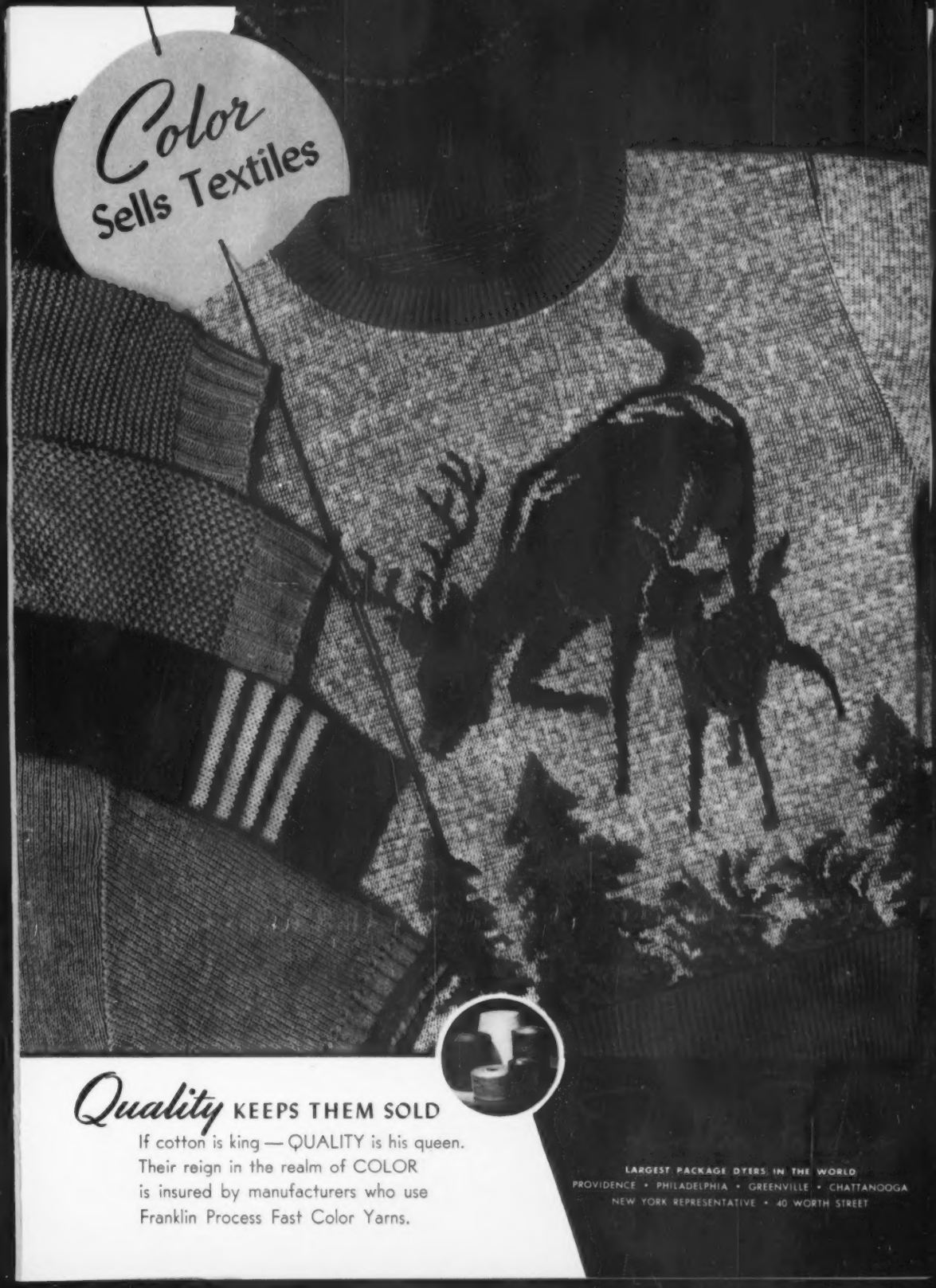


American LEATHER BELTING Association

Headquarters for Authentic Power Transmission Data

41 PARK ROW, NEW YORK 7, NEW YORK

AL-42



Quality KEEPS THEM SOLD

If cotton is king — QUALITY is his queen.
Their reign in the realm of COLOR
is insured by manufacturers who use
Franklin Process Fast Color Yarns.

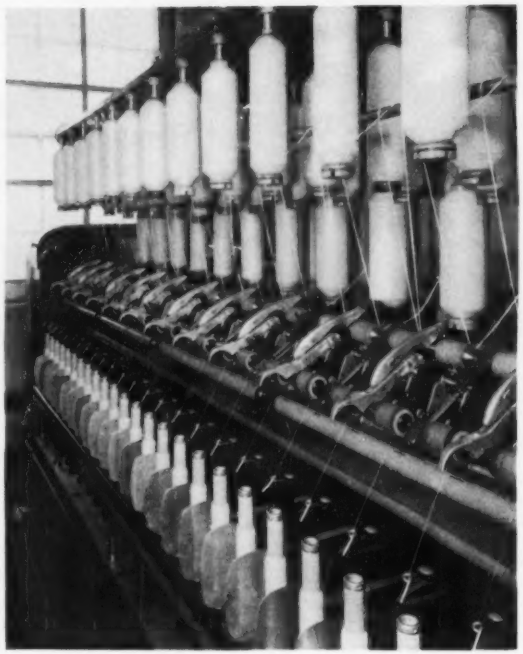
LARGEST PACKAGE DYERS IN THE WORLD
PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA
NEW YORK REPRESENTATIVE • 40 WORTH STREET

THE

H & B

CASABLANCAS S-3 SYSTEM

for Spinning Synthetics and Blends



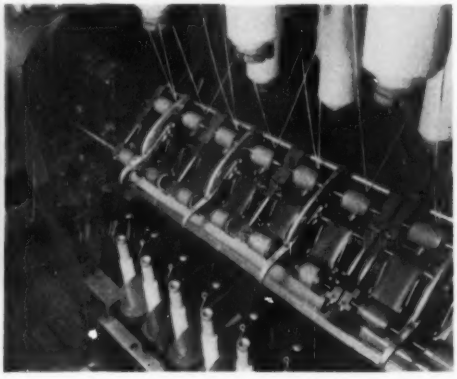
First introduced at the American Textile Machinery Exhibition last May, the H & B Casablancas S-3 System for synthetic fibers is now developed to a high degree of operating efficiency. The system features:

- *an extra, wide roll stand*
- *new interlocking saddle*
- *independent traverse motion*
- *new cap bars*
- *large cradle assembly*

The most important new S-3 feature is the wide roll stand which allows roller settings to accommodate fibers up to 3" in length. Changing the roll stand involved a new design of draft gearing, gear box and cover. The entire drafting element is mounted in a cross girt, which with the new gearing gives greater strength to the entire system.

Offers Flexibility

AND COMPLETE FIBER CONTROL



The newly designed interlocking saddles are spring weighted. Pressure can be released by merely lifting up the saddle.

The cradle design provides for the important interchangeable platforms for different staple lengths. These platforms are mounted inside the bottom apron. They are clean, easy to insert and are marked for quick identification. Changing platforms for different staple lengths involves no change of cradles, belts or roll settings.

The H & B Casablancas S-3 System utilizing a combination of apron length, tensor opening and platform position, offers great flexibility along with complete fiber control regardless of staple length.

Contact an H & B Sales Engineer for complete details on this new spinning system for synthetic fibers.

H&B AMERICAN MACHINE CO.

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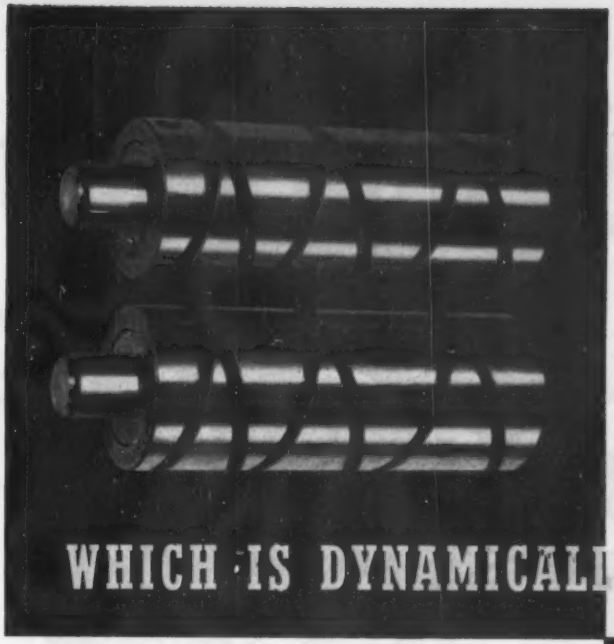
Builders of MODERN TEXTILE MACHINERY

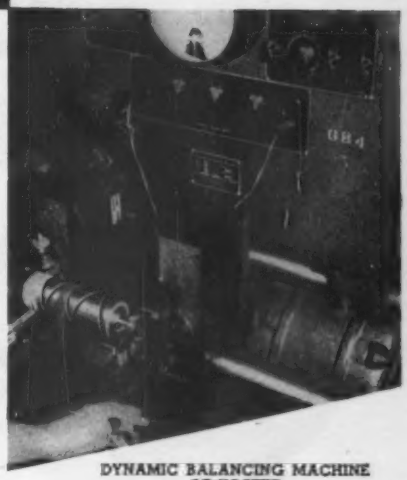


WHICH IS DYNAMICALLY BALANCED?

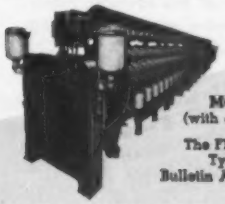
These two traverse cams for the Model 102 Winder are as much alike as precision machining and grinding on modern equipment can make them. But yet, they're not alike. One of these cams in its present form is sure to cause vibration . . . and enough chatter to compete successfully with a women's bridge party.

How do we know all this? It's information that's readily supplied by the dynamic balancing machine shown here. Electronically operated, this expensive and intricate machine indicates immediately if a cam is out of balance and where.

Our twin cams are but one example of the painstaking control of quality in every component part used in the building of Foster winders. You get built-in quality that pays off in high production at low operating cost and a minimum of maintenance.



DYNAMIC BALANCING MACHINE AT FOSTER



MODEL 102 WINDER
(with conditioning attachment)

The FLEXIBLE Winder For All Types of Staple Yarns
Bulletin A-95 gives complete details

FOSTER MACHINE CO.

Southern Office: Johnston Bldg., Charlotte, N. C.; Canadian Representative: Ross Whitehead and Company Limited, University Tower Bldg., 660 Ste. Catherine St. West, Montreal, Que.; European Representative: Muschamp Taylor Limited, Manchester, England

FOSTER F WINDERS

QUALITY WINDERS FOR ALL TYPES OF YARNS

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SOLUBILIZES STARCHES RAPIDLY
WORKS AT HIGH TEMPERATURES WITHOUT CLOSE CONTROL
SUITS ANY DESIZING PROCESS— KIER, JIG, KETTLE OR PAD
CUTS COST AND CONVERSION TIME
STABLE IN STORAGE
RHOZYME LA
LIQUID DESIZING AGENT
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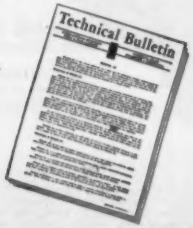
Be wise and thrifty. Write today for full details of this low-cost, highly efficient new enzyme desizing agent . . . RHOZYME LA.



CHEMICALS FOR INDUSTRY

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INVESTIGATE
nylon travelers

PROVE TO YOURSELF
THESE IMPORTANT ADVANTAGES

1. Higher spindle speeds.
2. More yardage on your present bobbins.
3. Much less lubricant required.
4. Less end breakage.
5. Longer life. Less down time for changing travelers.
6. Cleaner frames—cleaner rooms.

1. LIGHT
2. STRONG
3. RESILIENT
4. SMOOTH
5. TOUGH
6. EXTREMELY RESISTANT TO WEAR

Many thousands of these Nylon Travelers are in daily use—giving complete satisfaction.

SEND FOR SAMPLES

Include Style and Depth of Your Rings and Samples of Travelers You Now Use.

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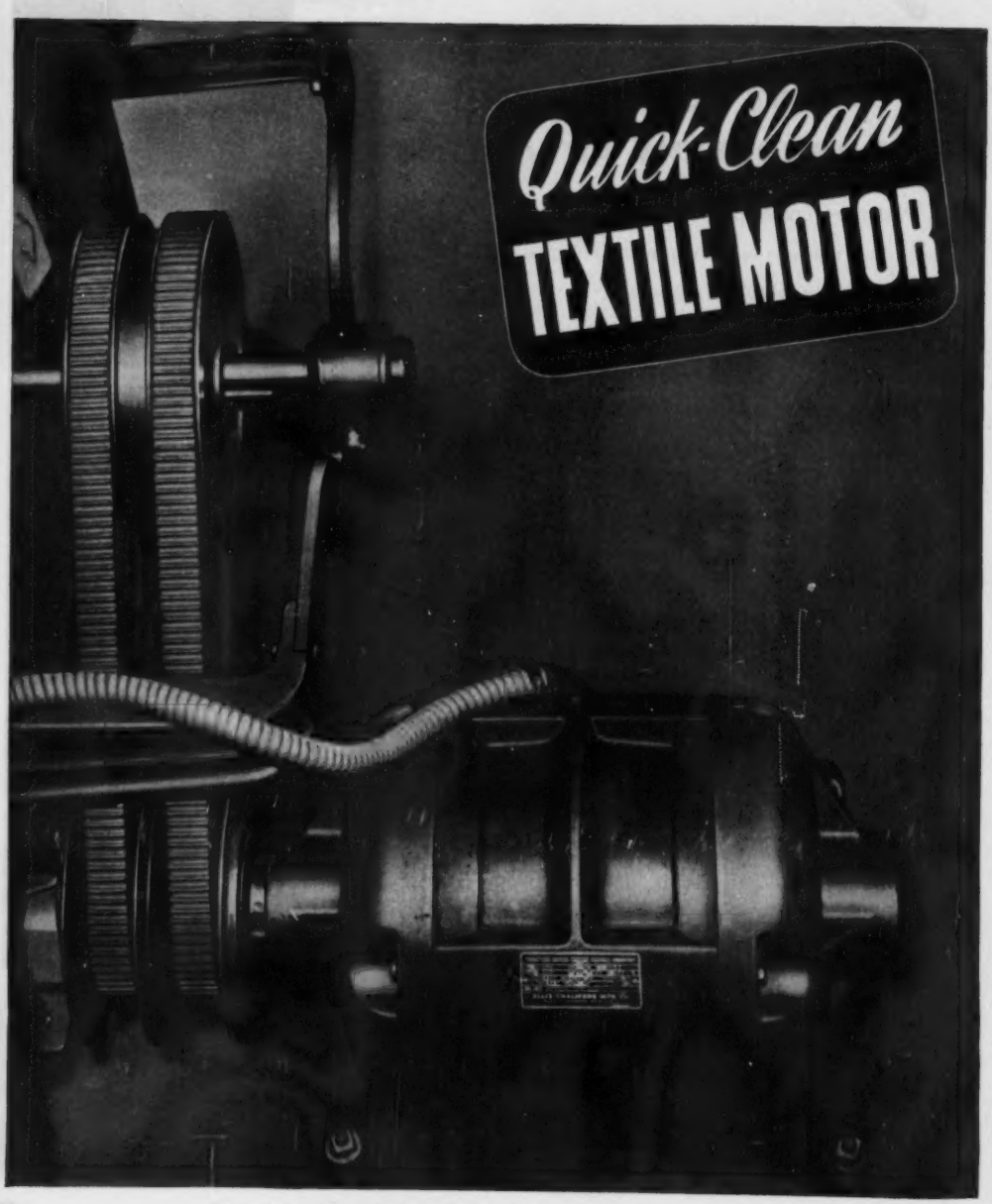
THE CLARK THREAD COMPANY, INC.
264 Ogden Street, Newark 4, New Jersey

SELLING AGENT
THE SPOOL COTTON CO.
264 Ogden Street
Newark 4, New Jersey

NO Lint



Troubles Here

QUICK-CLEAN wide open design sweeps lint and dirt in . . . out . . . and away. None can stay in the motor to cause costly trouble.

YOU JUST DON'T HAVE MOTOR TROUBLES due to lint and dirt laden atmospheres when you use *Quick-Clean* motors. Powerful fans sweep cooling air in and out again through large air passages. Interior surfaces are smooth, hard and contoured to aid air flow. There is no place where lint and dirt can collect.

Cast Iron Frame

The frame of the *Quick-Clean* motor is rigid cast iron which inherently resists the corrosive action of moist mill atmospheres. Cast iron insures never-changing alignment under all normal operating conditions.

Factory Lubricated Bearings

Bearings are lubricated at the factory and operate without attention or cost for years. Grease or oil cannot leak from the bearings to soil materials or collect dirt. Lint and dirt cannot enter the bearing.

Get the Facts

Your nearest Allis-Chalmers Authorized Dealer or Sales Office has complete information on the *Quick-Clean* motor. Or write Allis-Chalmers, Milwaukee 1, Wisconsin for the bulletins shown below.

Match Quick-Clean Motors with A-C Starters

Developed for dependable, safe starting of *Quick-Clean* motors. Other controls for all electrical equipment in your plant. For competent application engineering, see your Allis-Chalmers Authorized Dealer or Sales Office.

A-3232

Quick-Clean, Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.

Send for Free Engineering Literature

Quick-Clean Motors	51B6055	Power Generating Equipment, Transformers, Circuit Breakers, Power Distribution Equipment	25B6150
Allis-Chalmers Loom Motors	51B7111		
Texrope Drives	20B6051		
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COMPLETE SERVICE from power line to machine

Transformers

Motor Control

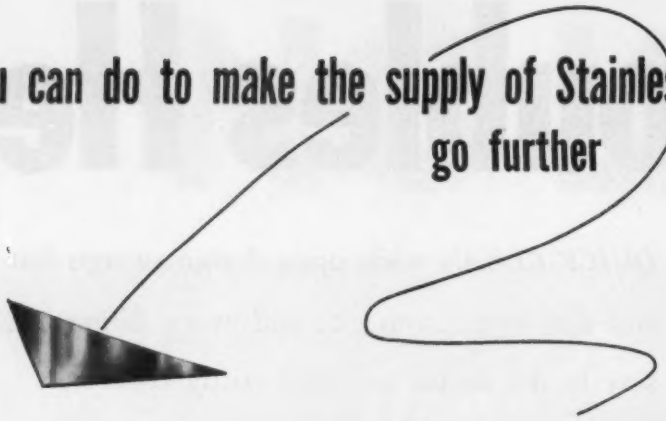
Motors

Texrope Drives

ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry

What you can do to make the supply of Stainless Steel go further



Tell your supplier exactly where you'll use Stainless and how you'll fabricate it

Keep these points in mind, too, when you order Stainless

Minimize your scrap losses by ordering alternate multiple sizes that will cut to best advantage, and that will allow the mill to utilize the maximum amount of good material.

Indicate, if possible, acceptable alternates in composition, gage, size and finish.

"Second guessing" and "trial-and-error" specification of Stainless Steel are out of the question today with this vital material in such restricted supply. It's up to you to do everything possible to get the right Stainless and then use it right.

Your supplier—no matter who he is—can give you valuable help in this matter. He knows the advantages and the limitations of the various Stainless grades. And, since the supply picture varies from grade to grade, he may be able to suggest an alternate composition that will speed up delivery and give equally good or better results.

Your supplier knows the fabricating characteristics of Stainless grades, too. Consequently, he may be able to suggest slight changes in your fabricating procedure that will speed up or simplify production. In other words, the better he understands your problem the better able he is to give you the Stainless that will do the best job for you with the least trouble and delay.

So give your supplier all the facts. And don't forget to include a definite date for delivery . . . the date when you actually plan to use the material. It will help to distribute supplies as equitably as possible.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND · COLUMBIA STEEL COMPANY, SAN FRANCISCO
NATIONAL TUBE COMPANY, PITTSBURGH · TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM · UNITED STATES STEEL COMPANY, PITTSBURGH
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USS

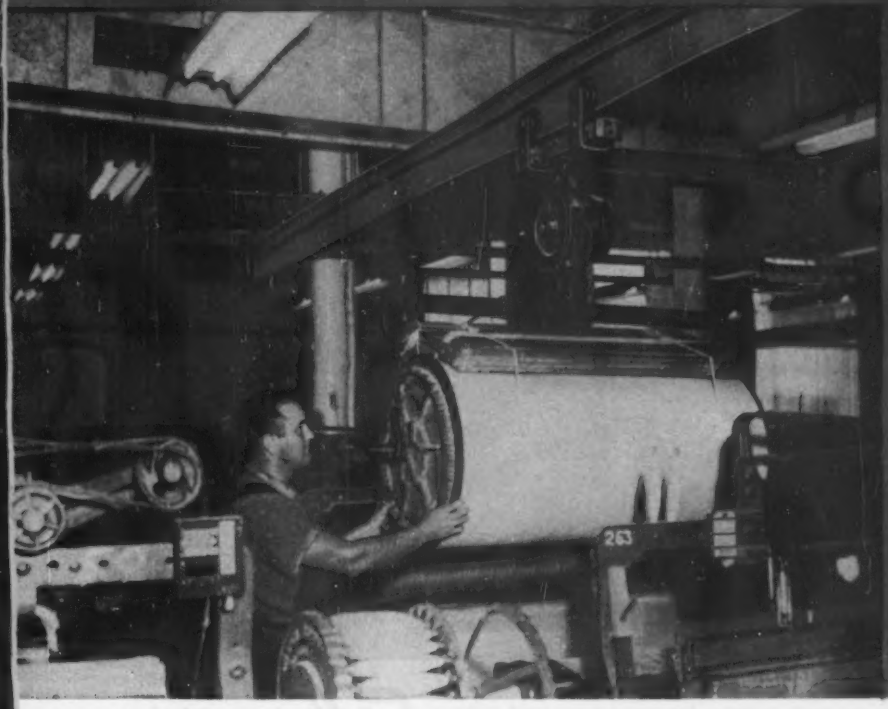
U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

1-384

UNITED STATES STEEL

Overhead Louden MONORAIL Systems speed production, cut costs



. . . beam handling to and from the slashers

. . . weave room beam to and from tying-in machine

. . . loom beam handling in the weave room

. . . roll or bale handling in finishing

. . . yarn and cloth handling in the dye house

Automatic Ceiling Cleaner

Just push the control button and let the Louden Automatic Ceiling Cleaner do the rest. As it travels around the room on its overhead Monorail track, the Louden Cleaner alternately sweeps right and left to keep ceiling, lights, piping, ducts free of lint. Write for details today.

The hazards of using floor gantries to handle beams and laps in textile mills can be avoided by the use of efficient, labor-saving Louden Overhead Handling Systems. Floor maintenance and aisle congestion are eliminated.

Beams weighing as much as 1,000 or 1,500 pounds are now speedily handled in slasher, weaving and dye departments . . . as are heavy laps to and from pickers, and bulky bales in cloth, inspection and opening operations . . . in a system that can be made to unify all process on a flow principle.

Labor costs are cut substantially, and the capacities of work and storage areas are increased . . . simply by the installation of Monorail equipment. Write today for a new, free, illustrated book, "Economical Material Handling" that may open your eyes to saving opportunities in the operation of your own mill.

MODERN TEXTILE MILLS USE

Louden

OVERHEAD MATERIAL HANDLING

THE LOUDEN MACHINERY COMPANY • 301 COURT STREET • FAIRFIELD, IOWA

You've Taught Us a Lot in *84 years...*

From our daily contacts with you and hundreds of other mill men, we have accumulated an excellent understanding of your problems.

We know that mills welcome assistance that speeds up production, makes tough jobs easier, and increases efficiency.

That's why we invite you to talk over your problems with a Howard Brothers representative. Your dealing with him will be confidential in every way . . . and of course, there is no obligation on your part.

Contact our nearest plant or branch office now.

HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS

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TUFFER CARD CLOTHING — ***IMPROVES PRODUCTION ALL ALONG THE LINE***

Fewer seconds...fewer rejects with **Syton** for SLIPPAGE CONTROL

United States Testing Co. Inc. slippage control tester in use at Monsanto's Textile Chemical Department Laboratories.

Now you can put a sub-microscopic, anti-slip "tread" on smooth, slippery filament yarns with Syton alone or as part of the finishing formula. In many cases, practically 100% reduction in slippage is obtained in filament fabrics. Syton is a colloidal silica dispersion which is applied on the pad, on the jig, or in the final rinse following a wash. It's stable and compatible with a wide variety of finishing agents.

Anti-Slip Agent in Wet Processing: Many finishers use Syton to control slippage in some low-end constructions in scouring, dyeing and finishing.

Delustering Effects are achieved with larger concentrations of Syton alone or in conjunction with pigment dullers.

Crisp, Dry Finish and a pleasing, "worsted-like" hand is obtained with Syton on spun viscose-acetate or rayon-wool fabrics.

Special Effects on Cotton, Wool, Synthetics: Desirable effects are obtained with Syton on nylon marquisettes, rayon linings, satins, taffetas, ribbons, and Fiberglas fabrics.

Added Functional Effects include snag resistance, anti-blocking, adhesion and seam strength.

MONSANTO CHEMICALS—PLASTICS

SERVING INDUSTRY...WHICH SERVES MANKIND

New, free technical bulletin

on "Syton in Textile Finishes" may be obtained with the coupon.

For full information on Syton*, and other Monsanto textile chemicals such as Stymer*, for rayon slashing; Merlon* resins for durable finishes; Resloom*, for washability and wrinkle resistance; Sterox*, Sted*, for cleansing and scouring; Catalyst AC for curing melamine and urea resin finishes; Dye fixatives; Rezgard*, fugitive-type flame retardant—check and return the coupon.

MONSANTO CHEMICAL COMPANY, Textile Chemicals Dept., Desk TWT-39
Everett Station, Boston 49, Mass.

Please send me the technical bulletin, "Syton in Textile Finishes."
Please send me information on: Syton Sterox Stymer Merlon Sted Resloom Catalyst AC Dye fixatives Rezgard

Name & Title

Company

Address

City, Zone, State

*Reg. U. S. Pat. Off.

"So you think you gals know how to shop? Well, get a load of this load of stuff!"

YES, William the Conqueror, that's quite a suit you've just bought yourself there! Nice style, fine tailoring . . . and the material is really *something!* Bet you shopped every place in town for it. Now go ahead and tell the little woman what you paid for it. She won't believe you 'til you show her the slip! Show her the label, too . . . and tell her what the salesman told you about the mill that wove that cloth.

Now let us tell you (and her) what *we* know about that mill. It's a top operation that has a weaveroom full of modern, automatic C&K Call-Box Looms that turn out so much handsome cloth *so fast* that you can now buy . . . at the price you are boasting of . . . a suit that would have been undreamed of, in your textile philosophy, not so many years ago.

Today, competition in quality enables *every* man and woman to be a smart shopper. And as long as there are progressive mills with modern C&K Weaverooms . . . kept at top operating efficiency with Certified C&K Looms Parts . . . you and your wife will continue to be the best-dressed people in any country in the world.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics

Competition begins in the Weaveroom! . . . and that's where C&K begins your profit-with the World's Longest Line of Looms

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NYTRON

offers A DIFFERENT COMBINATION OF PROPERTIES

FOR TEXTILE PROCESSING

NYTRON, Solvay's new, low-cost wetting agent-detergent, offers a new combination of properties to the textile processing industry . . . a combination available in no other synthetic organic detergent. Add NYTRON to soaps, acids and alkalies . . . try it for soaping-off, dye leveling, scouring and all other wet processes where wetting, penetration, detergency and rinsability are important factors.

NO OTHER SYNTHETIC ORGANIC DETERGENT CAN MATCH NYTRON'S EXCLUSIVE COMBINATION OF PROPERTIES

EXCEPTIONAL DETERGENCY—in cold or hot water . . . retains its detergent action when used in either acid or alkaline mediums

EXCELLENT WETTING—reduces wetting time from hours required in plain water to a matter of seconds

QUICK, THOROUGH RINSING—even in cold water; does not leave an insoluble deposit

COUNTERACTS HARD WATER DIFFICULTIES—will not form hard water curd; more economical because increased quantities do not have to be added to compensate for water hardness

REMAINS CHEMICALLY STABLE—under widely varying conditions of temperature, acidity or alkalinity

EXCELLENT EMULSIFYING POWER—removes oil and greases from fabrics and surfaces

HIGH AND RAPID SOLUBILITY—goes into solution almost instantly even in cold water; will not "salt out" in concentrated solutions of many acids, alkalies or metallic salts

REDUCES SURFACE TENSION—addition of only 3½ ounces to 100 gallons of water will reduce surface tension by more than 50%; this action is actually enhanced under hard water conditions

Use NYTRON for Wools, Nylons, Rayons, Cottons

- **scouring prior to yarn and cloth dyeing**
- **rope soaping of dyed cloth**
- **a penetrating and leveling agent in dyeing operations**
- **carbonizing of wool (wetting and penetrating)**
- **scouring woolen, rayon and nylon piece goods**
- ***many other operations***

A SOLVAY PRODUCT

Samples of NYTRON are available on request. Mail this coupon now for your free sample—no obligation.

SOLVAY SALES DIVISION, Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.

I want to see for myself how NYTRON—the new type of synthetic organic detergent with the exclusive combination of properties—can improve my textile operations. Please send me a free sample.

Name_____

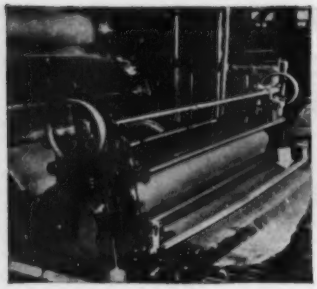
Title_____

Company_____

Address_____

City_____ Zone_____ State_____

SW-3



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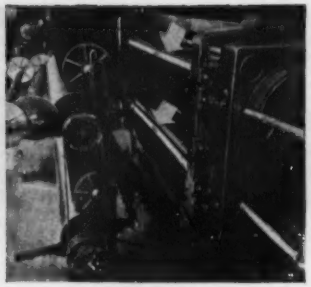

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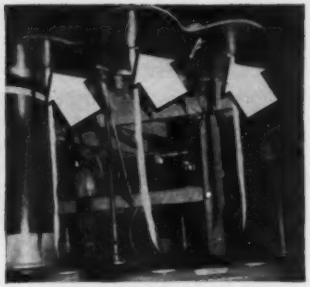

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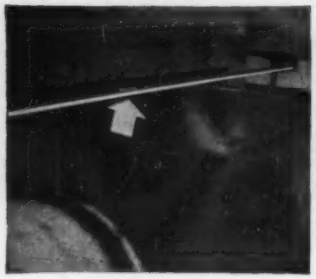

coaters...

ironers...

tenter frames...

Ionotrons stop static troubles

These are some of the kinds of textile machines on which Ionotrons have already eliminated static problems. In numerous mills where Ionotrons have been installed, they have reduced work stoppages and spoilage, eliminated the need for high plant humidity, boosted production, or improved quality.

Ionotrons—a unique application of atomic energy—contain a self-activating source of continuous alpha radiation. The alpha rays ionize the air in the static trouble zone. The ionized air conducts the static harmlessly to the ground. The static-removing effect of Ionotrons is continuous and permanent. They can be produced in many shapes to fit various types of textile equipment.

The first cost of Ionotrons is the *only cost*. There are no moving parts, no power requirement, and no operating cost! The only maintenance required is an occasional wipe with a soft cloth.

Whatever your static problem may be, it's easy to find out whether Ionotrons can solve it. Along with an illustrated 8-page booklet, we'll be glad to send you a simple questionnaire to aid in analyzing your problem.

If your application is for wool and worsted machines, write Davis & Furber Machine Co., North Andover, Mass. Concerning any other textile application, write Dept. 916, U. S. Radium Corporation, 535 Pearl Street, New York 7, N. Y.

IONOTRON Static ELIMINATOR

AHCO PRODUCTS

DEEP
UNIFO
ABSOR
is yours
with AHCOWET RS

A SYNTHETIC SURFACE-ACTIVE COMPOUND

Here is the perfect answer to uniform absorbency for mechanically controlled shrinkage processes . . . the outstanding wetting agent for package dyeing.

Use AHCOWET RS directly in peroxide bleach baths . . . goods will be left more absorbent.

Ask for complete technical information.

ARNOLD, HOFFMAN

PROVIDENCE • RHODE ISLAND

Associated with
Imperial Chemical Industries, Ltd.

ARNOLD, HOFFMAN & CO., INCORPORATED • EST. 1815

Offices: Charlotte, Cincinnati, New York, Philadelphia, Providence
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AHCOWET RS

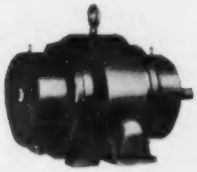
GUARD YOUR PRODUCTION AGAINST the Hazard of SPLASHING LIQUIDS

WITH

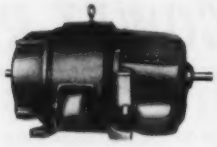
Century SPLASH PROOF MOTORS

Century 7½ HP Type RS Single Phase Repulsion Start Induction Brush Lifting Splash Proof Motor.

1 to 7½ HP Direct Current Splash Proof Motor.



150 to 400 HP Type SC Squirrel Cage Induction 3 Phase Splash Proof Motors.



30 to 100 HP Type SR Slip Ring Induction 3 Phase Splash Proof Motors.

1 to 125 HP Type SC Squirrel Cage Induction 3 Phase Splash Proof Motors.

3 to 25 HP Type SR Slip Ring Induction 3 Phase Splash Proof Motors.

1 to 20 HP Type CS Capacitor Start Induction Single Phase Splash Proof Motor.

Keep the vital parts of your motors dry —even when the full force of a hose is turned directly on them. Century Splash Proof motors eliminate production losses due to dripping or splashing liquids or falling solids. They also protect against rain, snow, sleet or hail on outdoor installations.

Century Splash Proof motors are available in a wide range of types and sizes for all popular applications. Other types and ratings are available to meet your electric power requirements. You can specify Century motors with confidence.

Century motors are built in sizes ⅛ to 400 horsepower.

697

CENTURY ELECTRIC COMPANY IS CELEBRATING ITS 50th YEAR IN THE ELECTRICAL INDUSTRY

CENTURY ELECTRIC COMPANY, 1806 Pine Street, St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

Strong... Resilient... Uniform...

Garland Rawhide Pickers

Molded for uniformity . . . with rounded spindle holes, reinforced stick holes and strengthened picker heads, *new* Garland Rawhide Pickers are getting an enthusiastic response in mills all over the country. Made exclusively of top grade, imported water buffalo hide for the resilience that means long wear.

A Note About the Supply Situation

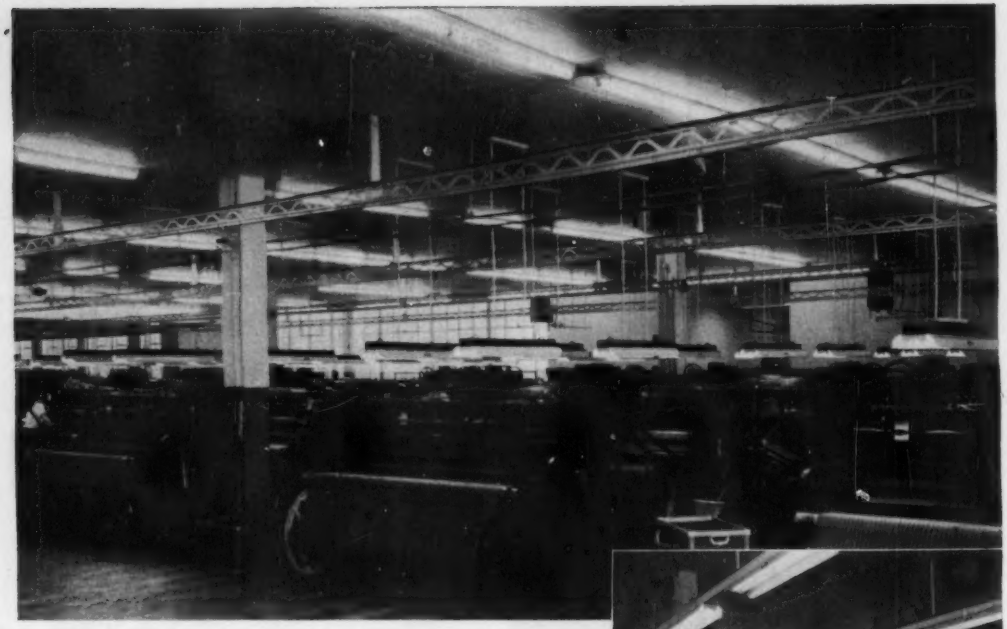
A number of our customers have inquired about future deliveries and possible short supply. Like any other manufacturer today, we don't know what tomorrow will bring. However, our present stocks are adequate to meet current demands, and we will make every effort to continue to fill all orders to the best of our ability.

Just Out! New Catalog . . .

A comprehensive new Garland Rawhide Picker catalog has recently been mailed to key men in the textile industry. If you have not received a copy and feel that it would be helpful in your work, write to us stating your name, position, and company. Your request will receive prompt attention.

Garland
MANUFACTURING CO.
SACO, MAINE
Manufacturers of Rawhide Loom Pickers for over 80 years

For more information, write direct or use Reader Service post card.



AMCO Humidification System in weave room of Broad Brook Company, Broad Brook, Conn.

Control regain and assure a

BETTER WOOL PRODUCT ...INCREASED PROFITS!

You may be losing more than you think if yours is a "dry-air" mill.

Total weight, after all, is dry wool plus moisture. So when moisture in the air is abnormally low, moisture from the wool evaporates into the air — at the expense of the wool you are processing. Is it any wonder that profits begin to dry up when the air dries out?

AMCO Humidification keeps the air, your biggest single asset, "liquid". It governs surrender of regain; assures better control of weights and yarn counts; reduces fly; improves end products by preserving flexibility, resiliency and pliability. And very important . . . that perennial trouble-maker, static electricity, is effectively routed. All good reasons why it will pay you to consult a trained and experienced AMCO engineer without delay.

Should you already have a modern, efficient humidification system and seek to add *cooling*, AMCO can help you with that job, too. Whether you propose installing a ductless system, a unit duct, or a central station air conditioning system, AMCO can tailor-make an installation to fit your specific needs.

AMCO system in spinning room of same mill

Benefits of controlled humidification

- Elimination of static electricity
- Higher yarn yields
- Less fly waste
- Oil savings through decrease in employed emulsions
- Greater spinning, dressing and weaving efficiency due to retention of moisture in yarn
- More flexibility, resiliency and pliability of yarn
- Better control of cloth weights.

AMCO

HUMIDIFICATION AND COOLING

AMERICAN MOISTENING CO., AFFILIATED WITH GRINNELL COMPANY, INC., PROVIDENCE, R. I. • BOSTON • ATLANTA • CHARLOTTE

Chemical yarns and fibers for all types of wearing apparel and household furnishings
Strong, tough, tire cord and fabric for longer wear, greater safety, and lower cost
Cellophane and cellulose acetate transparent packaging materials
HIGHLY PURIFIED WOOD CELLULOSE
is a basic raw material from which the products shown here are made.
Rayonier supplies a number of types of wood cellulose, each specially developed to produce best results in conversion to these and many other articles.
RAYONIER
INCORPORATED
Producers of highly purified wood cellulose for textiles, tire cord, cellophane, plastics
EXECUTIVE OFFICES:
122 East 42nd Street, New York 17, N.Y.
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Lincoln
Centralized Lubrication

Saves Downtime Increases Traveler Life

DORR WOOLEN CO.
MANUFACTURERS
GUILD, N.H.

March 10, 1950

Lincoln Engineering Co.
8 St. Mary's Street
Boston, Mass.

Gentlemen:

We have had the Lincoln Centromatic System installed on our frames since we purchased them and we are more than satisfied with its performance.

Two or three things which we noticed which might be of interest to you. One is the increase in Traveler life over what we expected. From what information we can gather from nearby mills using the same type of frames and same yarns, our Travelers are lasting from three or four times as long. We have no down-time required for oiling and our frames are much cleaner as a result of this installation. As a result of the effective lubrication, we notice a marked reduction in ends down.

The maintenance on this system is negligible to date and, in short, we would be pleased to recommend it to anyone contemplating installation.

Yours truly,
DORR WOOLEN COMPANY
President

GAD,Jr:P

Centro-Matic Lubrication System installed on (14) 120 Spindle Whitin Spinning Frames at Dorr Woolen Co.

Close-up view of Lincoln Centro-Matic injectors installed on Whitin Spinning Frames at Dorr Woolen Co.

Close-up view of Whitin Spinning Frame showing how injectors on each rail section are supplied with lubricant independently from the main supply line down through center of frame.

Lincoln's Centralized Lubrication Provides

Right Lubricant Quantity Time Automatically

Lincoln's Lubrication System specialists will work with you and recommend the time and money saving Centralized Lubrication System best suited to your equipment. Phone or write

SEE OUR CATALOG IN SWEET'S

• • • PIONEER BUILDERS LINCOLN LUBRICATING EQUIPMENT • • •

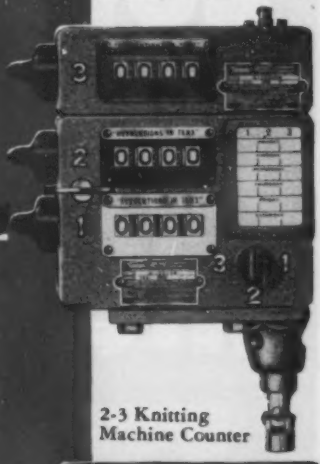
LINCOLN ENGINEERING COMPANY • 5742 Natural Bridge Avenue • St. Louis 20, Mo.

DISTRIBUTED NATIONALLY THROUGH LEADING INDUSTRIAL WHOLESALERS LOCATED IN PRINCIPAL CITIES

General Purpose Counter

2-3 Hank Counter

Double-Wheel Linear Counter



2-3 Knitting Machine Counter

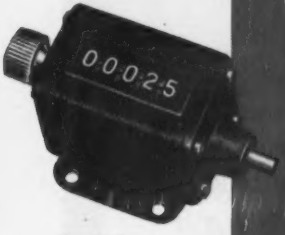
Magnetic Counter

For Competent Sales Engineering and Factory-Expert Service

... count on

VEEDER-ROOT

World's Largest Manufacturers of Counting Devices



Small Reset Counter

2-3 Pick Counter

Loom Cut Meter

VEEDER-ROOT

INCORPORATED

'Counting House of the Textile Industry'

HARTFORD 2, CONNECTICUT

GREENVILLE, SO. CAROLINA

Offices and Agents in Principal Cities

Montreal, Canada; Dundee, Scotland

Columbia Chemicals

A DEPENDABLE NAME IN

For over half a century, Columbia has been a leader in the production of alkalies and related chemicals. And, within the last five years, Columbia has expanded its operations to include a variety of organic chemicals.

Columbia's long-established reputation comes from many things. It comes from Columbia's record as a volume producer of quality chemicals . . . from the expert technical service Columbia renders to its customers . . . and from Columbia's many improvements and innovations in chemical manufacturing, shipping and handling.

The customers of Columbia know they can always count on top quality chemicals and technical assistance that may lead to savings in shipping and storage space, time, labor and money.

- SODA ASH
- CAUSTIC SODA
- LIQUID CHLORINE
- SODIUM BICARBONATE
- CALCIUM CHLORIDE
- PHOSFLAKE
- CLEANER AND CLEANSER
- S. P. FLAKE
- SODA BRIQUETTES
- CAUSTIC ASH
- MODIFIED SODAS
- CALCENE T
- SILENE EF
- HI-SIL
- MONO-CHLOROBENZENE
- ORTHO-DICHLOROBENZENE
- PARA-DICHLOROBENZENE
- BENZENE HEXACHLORIDE
- MURIATIC ACID
- PITTCHLOR
- PACIFIC CRYSTALS
- BORAX
- PERCHLORETHYLENE

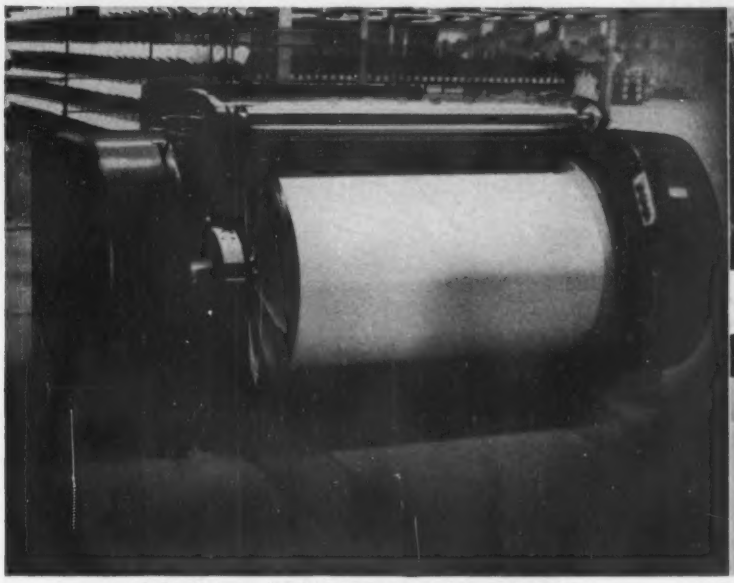
COLUMBIA CHEMICALS

Executive Offices: Fifth Avenue Building, Pittsburgh 22, Pa.

PAINT · GLASS · CHEMICALS · BRUSHES · PLASTICS

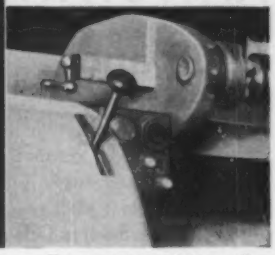
PITTSBURGH PLATE GLASS COMPANY

No More Lost Ends... When Warner "ICB" Units Are on the Beam!



Cocker Machine and Foundry Company's new high speed spindle driven beam warper incorporates three Warner ICB Brake Units.

Shows position of Warner 10" Brake on presser roll (upper) and 9 x 2½" Brake on main driving shaft (lower).

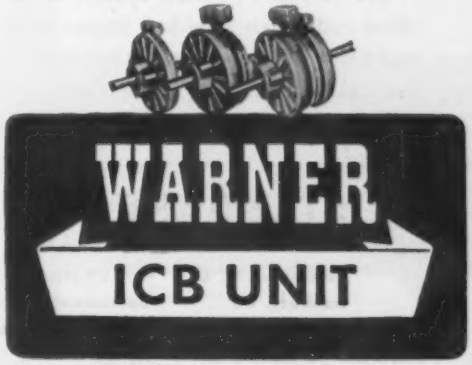


Shows position of Warner 5" ICB Brake Unit on crossover roll.

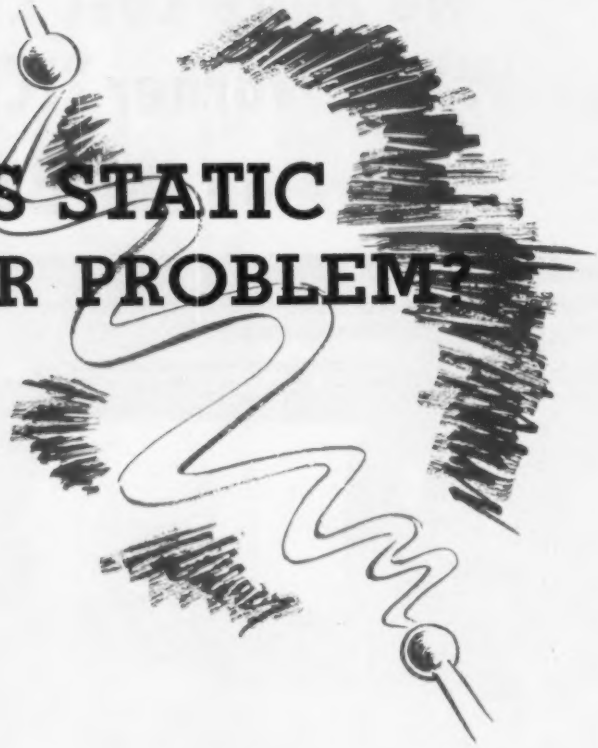
What Cocker says About the WARNER "ICB" Unit

Performance, cost and appearance of our high speed, spindle-driven beam warper were improved by using Warner ICB Brake Units. They provide faster stopping, thus preventing "lost ends" when a break in yarn occurs. With Warner ICB Brakes, machine stops in 1½ yds. at 500 yds. per minute machine speed. This compares with 5 yds. at the same machine speed when solenoid brakes were used. Warner ICB Units are easier to mount, require less space, eliminate noise and require no mechanical adjustments. Warner ICB Brake Power can be varied according to task, eliminating "skidding" of certain machine components. They are less expensive than the solenoid brakes formerly used.

Warner "ICB" Units are electrically-powered, low-wattage clutches and brakes. They can be operated singly or in combination — automatically or by push-button control. Being electric, they give lightning-fast response. Compact and simple, they provide easy installation and long-term dependable operation. They're a new answer to a wide variety of old machine design and operation problems. For further information on how Warner "ICB" Units may help you — write today to the WARNER ELECTRIC BRAKE & CLUTCH CO., Dept. TW, Beloit, Wisconsin.



Warner ICB Units are manufactured by Warner Electric Brake & Clutch Co.— Pioneers in the field of electric brake and clutch design and application since 1927.



IS STATIC YOUR PROBLEM?

Use STANTEX* ANTI-STATIC OILS and FINISHES

Yes, Stantex Oils and Finishes eliminate undesirable and costly static effects in the processing of staple, yarns and fabrics. You immediately get greater efficiency, increased production and improved quality.

ON STOCK . . . when applied to all fibers and blends at picker, Stantex Oils and Finishes reduces fly waste and broken ends, and produce more uniform yarns.

ON NYLON . . . when applied to yarn in coning and slashing, they eliminate wildness and produce better knitting and weaving results.

Many other successful applications are made on wool, rayon, acetate, cotton and synthetics. If static is a problem for you in processing, we invite your inquiry. Our technical staff will assist you to select the Stantex Anti-Static Oil or Finish suitable for your purpose.

STANDARD CHEMICAL PRODUCTS, Inc.

1301 JEFFERSON STREET, HOBOKEN, NEW JERSEY

Salisbury, N. C. • Chattanooga, Tenn. • Paterson, N. J. • Providence, R. I.
Sunbury, Pa. • Sacramento, Cal. • Greensboro, N. C. • Leaksville, N. C.

Manufacturers of: Pyrotex • Standapol* • Retardine* • Stanteosine • Standafin

* Trade Mark

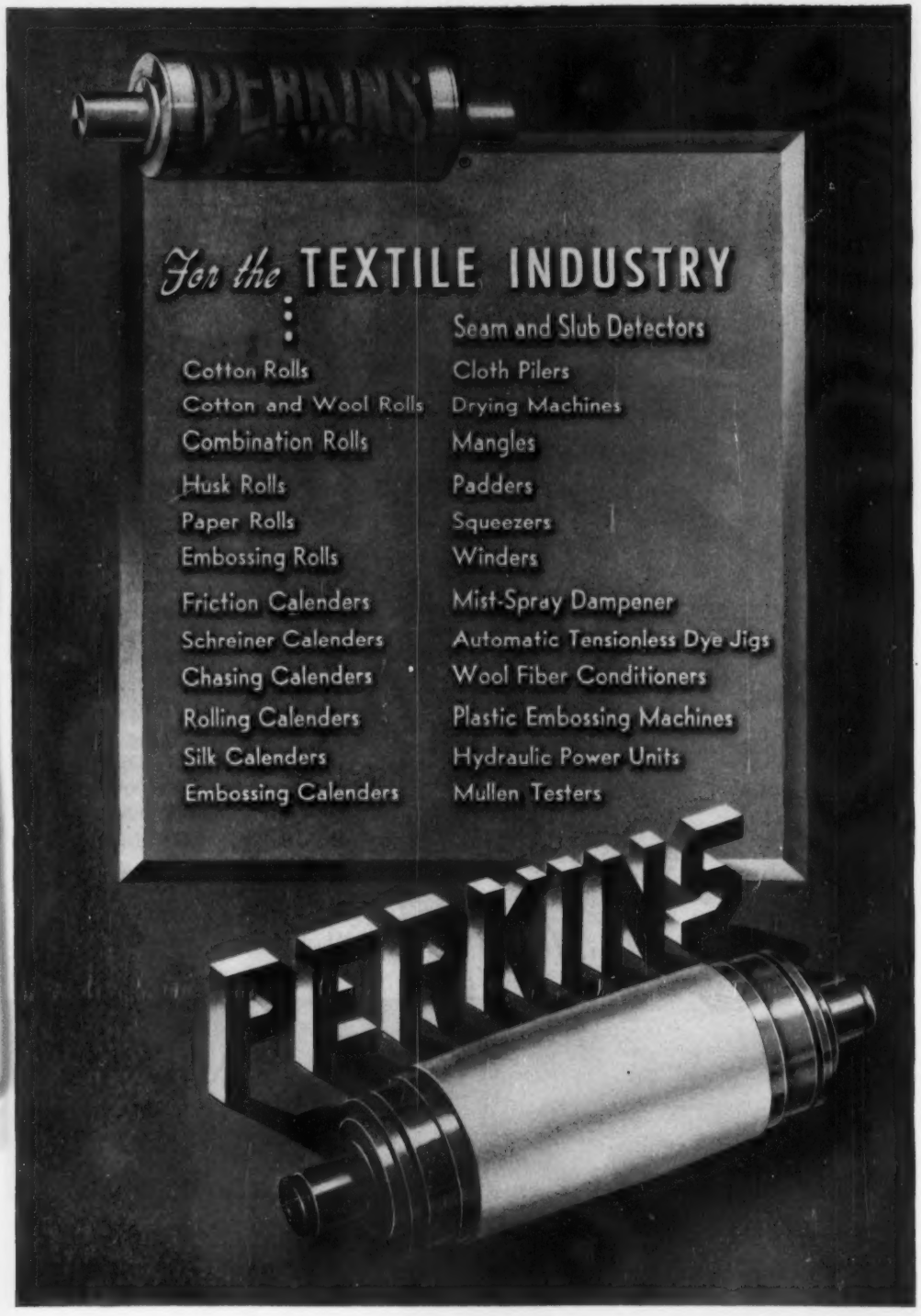
"We will sign it with our name"

Few things in life are as precious to a man as his name. He bestows it with pride on his heirs. He does not sign it lightly. To the man of integrity, his signature is not so much a means of identification as an evidence of good faith.

When the Jenkins brothers were satisfied they had made the best valve money could buy, they *signed* it with their name. Today, as for over three quarters of a century, that signature — forming, with the famous Diamond, the Jenkins trade mark — is more than a symbol of the maker's pride in his craftsmanship. It is the mark of a friend you can trust.

Jenkins Bros., 100 Park Avenue, New York 17. Jenkins Bros., Ltd., Montreal.

 For more information, write direct or use Reader Service post card.


PERKINS
For the TEXTILE INDUSTRY
Cotton Rolls
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Combination Rolls
Husk Rolls
Paper Rolls
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Schreiner Calenders
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Seam and Slub Detectors
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Winders
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Automatic Tensionless Dye Jigs
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Plastic Embossing Machines
Hydraulic Power Units
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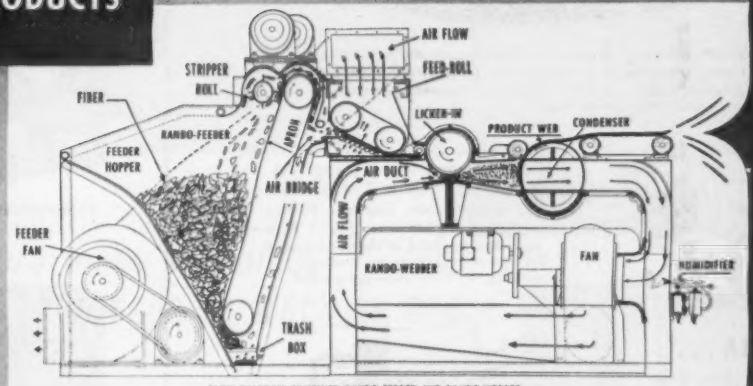
PERKINS

NEW APPROACH TO NEW TEXTILE PRODUCTS

This Amazing Machine Lays a Uniform Random Web from Waste Fibers



FLOW DIAGRAM COMBINED RANDO-FEEDER AND RANDO-WEBBER

HEAVY MATS • WADDING • INDUSTRIAL NON-WOVEN FABRICS • FELTS • HOUSEHOLD NON-WOVEN FABRICS

*T.M. Reg. Curlator Corp., Rochester, N. Y.

RANDO-FEEDER* AND RANDO-WEBBER*

In order that a wide variety of low cost, short staple waste fibers be processed into a random web they must first be uniformly fed, lengthwise and crosswise, into a machine, such as a RANDO-WEBBER. The RANDO-FEEDER meets these needs.

RANDO-FEEDER. In operation the fiber is transferred from the feeder hopper on the pins of an apron, past a stripper to an air bridge. Fiber is carried over and pulled as needed into a wedge-shaped opening between screen and roller conveyor forming a uniform, compact feed for the RANDO-WEBBER. Excess fiber returns to the hopper while tramp metal and other heavy trash are deposited in the trash box as neither will cross the air bridge. The feed of the web machine and screen section operates as a unit. Increasing speed automatically increases output of feeder.

RANDO-WEBBER. The mat of fiber developed by the RANDO-FEEDER is fed directly to the high-speed licker-in. Fibers are doffed from licker-in teeth into air stream in the throat of a Venturi-like duct, and deposited on a rotating circular condenser screen. Speed of screen determines web thickness. Web is carried from screen in continuous flow by rubberized belt conveyor.

TURN YOUR WASTE FIBERS INTO $$$'s.

Write for new Random Web Process Bulletin 101 and for a demonstration of the processing of your fibers.

TEXTILE DIVISION
CURLATOR
CORPORATION
ROCHESTER 10, NEW YORK

Curlator Corporation, Textile Division
514 Blossom Road, Rochester 10, New York

- ☐ Please schedule a demonstration
- ☐ Please make up samples from my own waste
- ☐ Please send Random Web Bulletin 101

NAME .....
COMPANY .....
ADDRESS .....
CITY .....

American Blower . . . a time-honored name in air handling

In Seattle, a leading university, as well as commerce, industry and public utilities, have made use of American Blower's Branch Office by calling Seneca 5860. To contact the American Blower Branch Office in your city, consult your phone book.

PLEASANT IDEA . . .

In Seattle, as in your home town, apartment house owners realize that invigorating, fresh air indoors can do much to attract desirable tenants. American Blower Utility Sets do just this. The Utility Set is ideal for general ventilation where duct systems are required. It can be used as a supply or exhaust fan and is equipped with Aileron Control for regulation of air flow. They're available as standard packaged units ready for immediate installation. Is there an idea here for you?

PROFITABLE IDEA . . .

Fuel savings alone often will pay for a new heating system when you replace obsolete equipment with American Blower Unit Heaters. For example, a manufacturer of specialty equipment investigated and found he could convert his whole plant to unit heaters and pay for the system in 3 years with the fuel savings alone. American Blower carries a complete line of Unit Heaters, including gas-fired models and models for steam or hot water heating systems, wall- or ceiling-mounted.

FRESH IDEA . . .

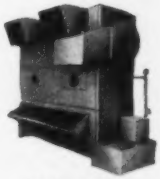
We know an advertising agency in one of our larger cities that recently moved their offices into one of those beautiful old homes along the river. The ventilating system was adequate for a family, but converting it for commercial use posed some problems. But American Blower equipment solved them nicely. For example, smartly-styled Aeropel Fans now keep the conference rooms pleasantly fresh, Utility Blowers ventilate rest rooms, and Ventura Fans handle the large work areas. End result, they say—fresh air fosters fresh ideas.

MAY WE SERVE YOU?

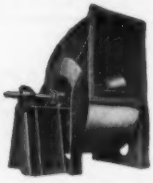
American Blower heating, cooling, drying, air conditioning and air handling equipment can do much toward improving comfort and efficiency in your business. For data, phone or write our nearest branch office.

Unit Heaters

Ventura Fans



Air Conditioning Equipment



Industrial Fans

Utility Sets

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN
WEST COAST PLANT: SAN LEANDRO, CALIFORNIA

Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

YOUR BEST BUY AMERICAN BLOWER AIR HANDLING EQUIPMENT

Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY

for **EXPOSITION** at Atlanta.
(At left) Cutler-Hammer Magnetic Starters and Safety Switches in the opener room and (below) Cutler-Hammer Combination Starters on drawing frames.

Where many machines must be made to work as one

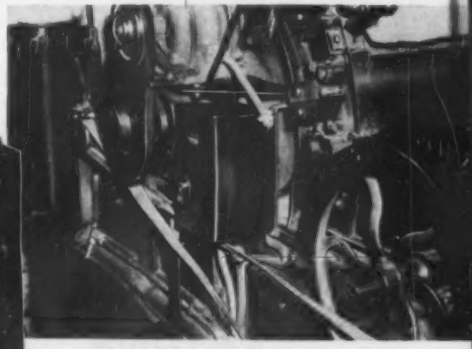
When total production depends on the coordination of many machines in many departments as in the textile field, the selection of the Motor Control that stands guard over and guides these machines becomes of paramount importance. And it is of paramount importance to every conscientious textile executive what the Cutler-Hammer 59-year specialization in motor control can put in his hands by way of *immediate* advantages and the far more crucial advantage of *long-time dependability*. See what experience in the plants of the nation as the nation's number one motor control specialists can mean to your production. Specify Cutler-Hammer Motor Control in your very next purchase. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wis.

for **WAUMBEC** at Manchester, N. H.
Cutler-Hammer primary resistance type Starters on spinning frames.

CUTLER-HAMMER CARD CONTROLLER

With integral drum type reverse switch

Here in one self-contained unit is all the control needed for a card... convenient pushbutton starting and stopping *plus* an integral reverse switch for cleaning and grinding. Card cannot be reversed accidentally or by any unauthorized person when controller case is padlocked. Easier to install. Easier and safer to use. Felt-gasketed against lint. Famous Cutler-Hammer Eutectic Element Overload Protection specially arranged to provide long starting time (required for cards) without loss of normal operating protection.



for a **NORTH CAROLINA** mill.
Specially designed Cutler-Hammer Controller for individual card drives.

CUTLER-HAMMER
MOTOR CONTROL
C-H

What's the inside story at Sapphire?

Behind these doors, the Sapphire Hosiery Corporation, Telford, Pa., turns out sheer full-fashioned nylon hosiery. And the inside story is air conditioning . . . the Carrier kind.

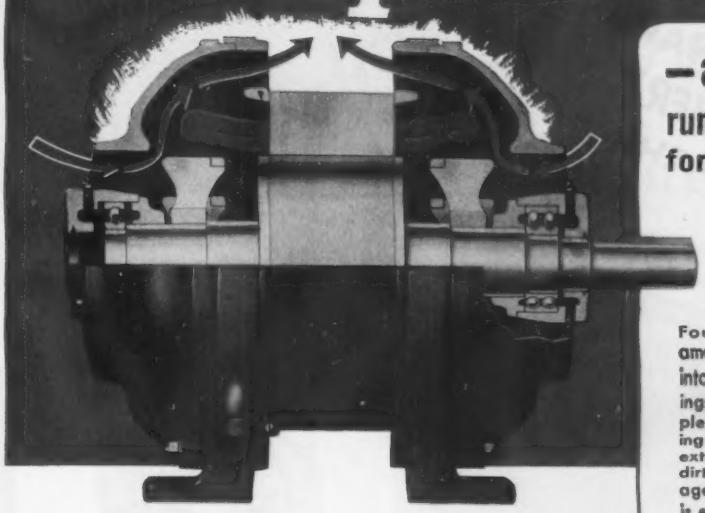
In this unusual installation the ducts are completely concealed. You see, they run between the suspended acoustical ceiling and the roof. This ceiling is perforated, and the air returning to the apparatus room filters uniformly up through the ceiling. As a result, the air distribution is almost perfect and temperatures are exceptionally uniform.

This is a typical example of the leadership and imagination with which Carrier engineers serve the textile industry. And it shows the benefits of close collaboration between mill management and Carrier . . . in this case before the construction started.

Built just three years ago, this mill has operated so successfully that the plant is being enlarged. The plant expansion will be air conditioned. And Carrier will do the job. Carrier Corporation, Syracuse 1, New York.

Carrier AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING

lint positively expelled!



—and you can run these motors for years, then easily relubricate them!

Four times the ordinary amount of grease is packed into the large reservoir. Bearings and grease are completely sealed in a cast housing with long running seals for extra protection against lint, dirt, dust and lubricant leakage. Eventually, relubrication is essential to lengthen bearing life—and this is easily done with a grease gun, without removing end shields or otherwise causing a production break.

On spinning frames, roving frames, pickers, etc., you can't beat the General Electric screenless open textile motor for downright dependability. Designed for lint-laden surroundings, it's built to prevent lint and dust from accumulating inside the motor.

HERE'S HOW! Through oversize inlets in each end shield, cooling air is pulled in by smooth surfaced fans, swept freely through large streamlined air passages, and blown out through big discharge openings directly over the laminations. Lint just can't hide anywhere inside.

Next time you need screenless open textile motors, call in your local G-E textile-mill specialist. Meanwhile, send for Bulletin GEA-1557 describing these motors in detail. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

SCREENLESS OPEN TEXTILE MOTORS

656-15

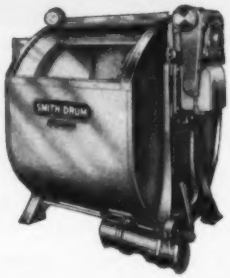
GENERAL ELECTRIC

Another SMITH-DRUM SERVICE to the Hosiery Industry!

REVOLUTIONARY NEW HOSIERY DRYING MACHINE

When nylon hosiery first made its appearance, SMITH-DRUM engineers immediately studied the entire hosiery dyeing and finishing process to determine if any changes should be made in existing equipment to handle the new fiber. We found that our regular hosiery dyeing machines were perfectly satisfactory for nylon hosiery. However, in conjunction with the Universal Dye Works, we developed a new method of finishing which completely eliminates the costly post-boarding process. The result of this work, covering a period of several years, is the recently announced and revolutionary SMITH-DRUM Nylon Hosiery Drying Machine. The first working model of this machine has been in daily operation at the Universal Dye Works for over a year, where it has *proved* its tremendous advantages over present post-boarding and drying equipment.

A full-size production pilot machine is also in operation at the Berkshire Knitting Mills, Reading, Pa. Production per operator is four to five times the usual rates . . . percentage of seconds is greatly reduced . . . the desired dull appearance is obtained . . . there are no forms to be cleaned . . . less floor space is required. Write promptly for complete information.



A WORTHY RUNNING MATE for this World Famous Hosiery Dyeing Machine

For over 35 years, the SMITH-DRUM Hosiery Dyeing Machine has been the accepted standard of the hosiery industry. Constantly improved in design and construction, it has always maintained its position of leadership in performance, long life and minimum operating and maintenance costs. It handles nylon, rayon or silk hosiery with equally satisfactory results.

SMITH, DRUM & COMPANY

Allegheny Avenue at 5th Street, Philadelphia 33, Pa.

For more information, write direct or use Reader Service post card.

use BECCO HYDROGEN PEROXIDE and BECCO PROCESSES for WOOL BLEACHING

Blanket wool, women's coat and dress goods, knitting yarns—indeed, wool in any form—becomes a bright, permanent white in color or is ready for dyeing in pure and delicate pastels when bleached with BECCO Hydrogen Peroxide.

For carpet wool in stock or yarn, hydrogen peroxide reduces the shade variations of natural wool so that dyeing gives the superb quality of uniform, true, and brilliant colors to the finished product.

BECCO Processes are simple, and precisely controlled . . . kind to the fibers . . . the result of years of laboratory study and proved operation in the hands of successful manufacturers who bleach raw stock, top, yarn, and fabric.

BECCO representatives can help you as they have helped others in the profitable application of BECCO Hydrogen Peroxide and BECCO Processes to your bleaching problems. BECCO SALES CORPORATION, Sales Agent for BUFFALO ELECTRO-CHEMICAL COMPANY, INC., BUFFALO 7, N. Y. • BUFFALO • BOSTON CHARLOTTE • CHICAGO • NEW YORK • PHILADELPHIA

BECCO SALES CORPORATION
Buffalo 7, New York

We are interested in further information on the bleaching of . . .

☐ Wool stock ☐ Wool top ☐ Wool yarn ☐ Wool fabric
☐ Other Wool products_____

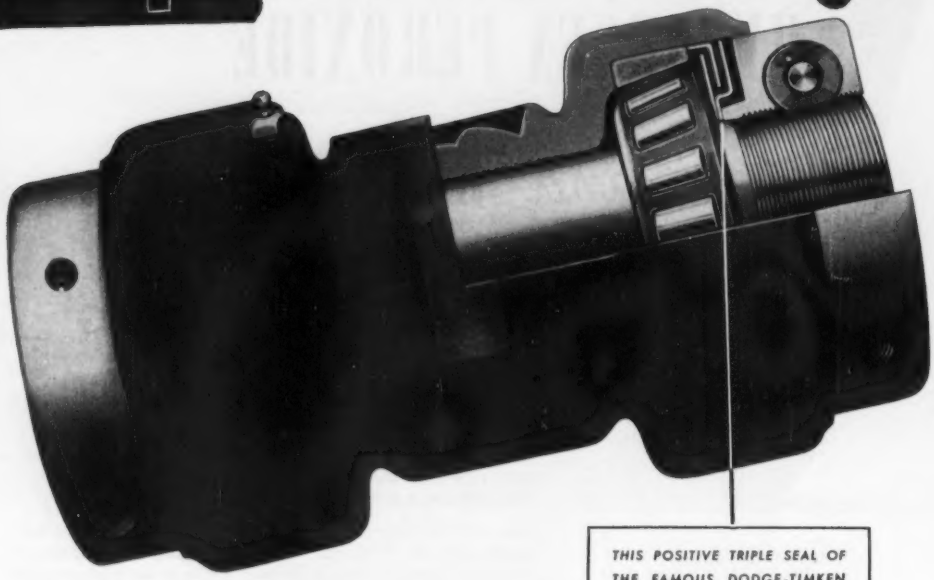
Name_____ Title_____

Company_____

Street_____

City_____ Zone_____ State_____ TW-3-51

Stops Oil Damage!



THIS POSITIVE TRIPLE SEAL OF THE FAMOUS DODGE-TIMKEN TYPE C BEARING ELIMINATES OIL DRIP...HERE IS THE IDEAL BEARING FOR TEXTILE MILL USE!

This installation of Dodge-Timken Hanger Bearings protects quality and profits. Special seals prevent oil leakage on the product, reduce "seconds." Bearings remain properly lubricated, saving labor.

IS OIL DRIP eating holes in your profits? To keep the lubricant where it belongs—*inside the bearing*—switch to Dodge-Timken. These famous bearings, noted throughout the world for quality, have proved themselves in millions of industry's toughest jobs.

The type C Dodge-Timken Bearing is especially adapted to use in the textile field. Its indestructible steel seal positively prevents lubrication leakage—definitely cuts a mill's loss from "seconds."

Available from distributors' stocks—in shaft sizes from 1-7/16" to 3-15/16". Completely assembled, factory adjusted, pre-lubricated and ready to install on the shaft for a minimum of 30,000 hours of uninterrupted service. Call your nearest Dodge Transmissioneer. Or write us for detailed bulletin.

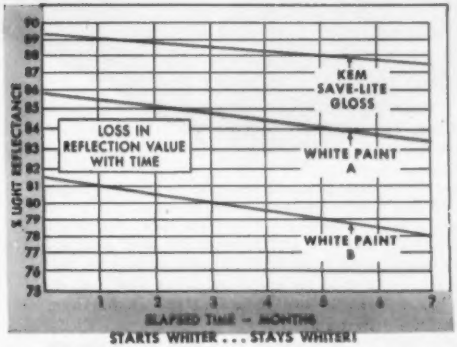
DODGE MANUFACTURING CORPORATION
1400 Union Street • Mishawaka, Indiana

CALL A DODGE TRANSMISSIONEER. He's factory-trained to help solve your power drive problems. Look for his name under "Power Transmission Equipment" in your classified telephone directory.

DODGE
of Mishawaka, Ind.

MAKE THIS TEST

before you paint your plant!


% LIGHT REFLECTANCE
LOSS IN REFLECTION VALUE WITH TIME
KEM SAVE-LITE GLOSS
WHITE PAINT A
WHITE PAINT B
ELAPSED TIME – MONTHS
STARTS WHITER . . . STAYS WHITER!

Note how the whiteness, or reflective value, of Save-Lite *starts* higher than conventional finishes when first applied, and *continues* higher, as time goes on. This means *longer* intervals before repainting is required.

Compare KEM SAVE-LITE with ordinary whites

SEE why it stays cleaner—longer!

See for yourself the difference there can be in the whiteness of "white" finishes . . . even when they are first applied! Make a side-by-side comparison of KEM SAVE-LITE Mill White against conventional white finishes on any wall surface in your plant.

You can see the difference, from the start, in gleaming, brilliant whiteness...a difference because of the *controlled,* light-reflective properties that are designed into SAVE-LITE Mill White Finishes.

KEM SAVE-LITE *starts* whiter . . . KEM SAVE-LITE *stays* whiter, as the actual light reflectometer measurements in the comparative chart show. You'll find these same properties, too, enable it to hide better and cover farther! Call your Sherwin-Williams representative today for a demonstration, or write The Sherwin-Williams Co., Cleveland 1, O. (Division Offices, Charlotte, N. C. and Boston, Mass.)

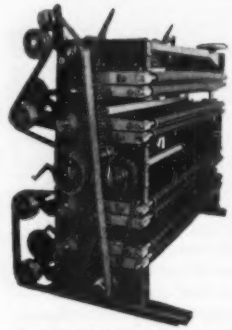
SHERWIN-WILLIAMS

INDUSTRIAL MAINTENANCE FINISHES

SAVE-LITE MILL WHITE • COLOR HARMONY FINISHES

MILL VILLAGE PAINTS

What's So "DIFFERENT" About Bull Dog Rub Aprons?



Illustrated above is a typical application of Bull Dog Rub Aprons in a leading manufacturer's Card Condenser.

Boss carders who have actually used Bull Dog Card Condenser Rub Aprons can probably give you the best answer to this question, in terms of dramatic results.

They will tell you, for instance, that because Bull Dog Rub Aprons are made of a specially formulated patented synthetic material, they are stronger than other types of rub aprons . . . and last much longer.

Bull Dogs permit increased card condenser production up to 25% or more. They increase jack-spool capacity 40-50% by weight, resulting in lower handling charges and longer runs. Roving is firmer and denser. End breakage is cut to a minimum.

These same users will tell you that they are getting longer machine life and lower maintenance costs . . . because Bull Dog Aprons can be run up to 30% slower where only ordinary rubbing is required.

And they will tell you about Bull Dog's patented end construction with enlarged rivet brads which securely anchor the buttons to the apron end . . . as many buttons as you want . . . spaced just as you want them spaced.

These are by no means all of the advantages obtainable with Bull Dog Rub Aprons. Which brings up the point that you deserve to know the full story and all the facts.

Contact your local distributor, or write direct . . . *today.*

BWH
DEPENDABLE RUGGEDNESS

Another Quality Product of

BOSTON WOVEN HOSE & RUBBER COMPANY

Distributors in all Principal Cities

PLANT: CAMBRIDGE, MASS. • P. O. BOX 1071, BOSTON 3, MASS., U. S. A.

fine for fancy fabrics

If you are using a reel machine on fancy rayon piece goods, such as upholstery or draperies, you'll find Santomerse No. 1 a hard-working and efficient helper. Santomerse No. 1 has proved itself in numerous textile operations on cottons, synthetic fibers and wool.

Santomerse No. 1, an alkyl aryl sulfonate with a minimum of 40% active ingredient, is the *all-purpose* detergent and wetting agent. It is a highly efficient detergent, a rapid wetter and penetrant, an easy rinser that holds particles of soil and unattached dyestuffs in suspension so they cannot settle on fabrics. It helps avoid crocking and aids in level dyeing.

Santomerse No. 1 is efficient in hard or soft water . . . in hot or cold solutions . . . in acid or alkaline baths. In hard water, anionic Santomerse No. 1 prevents the formation of insoluble metallic soap curds.

For information on the use of Santomerse No. 1 in any textile operation, contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

MONSANTO
CHEMICALS — PLASTICS

MONSANTO DETERGENTS, PENETRANTS, WETTING AGENTS

Anionic	Nonionic
Santomerse* No. 1	Sterox* SE
Santomerse S	Sterox SK
Santomerse 30X	Sterox No. 5
Santomerse No. 3	Sterox No. 6
Santomerse No. 3 Paste	Sterox CD (Nonfoaming detergent)
Santomerse D	

*Reg. U. S. Pat. Off.

SERVING INDUSTRY . . . WHICH SERVES MANKIND

For more information, write direct or use Reader Service post card.

LINT?

Improve loom room performance with this pair

Lint, dust, dampness will not affect the operation of these two. They're especially designed for loom room operation. Look at the extra features of the loom motor starter—designed in collaboration with leading textile manufacturers and the Associated Factory Mutual Fire Insurance Companies and the only starter approved by A. M. F. I.

Lint and dust are kept out! A special Neoprene gasket forms a positive, continuous seal between the box and cover. Pressure from cover clamp makes sure every crevice is filled with the pliable Neoprene gasket—positive assurance that combustible elements cannot enter the enclosure. Thus, one major cause of weave room fires is eliminated.

The loom motor, too, is totally-enclosed. No chance for lint to clog windings. Notice, too, there are no greasing nipples or cups on the motor. Life-Lines have pre-lubricated bearings . . . need no lubrication. Thus, outages from faulty lubrication are eliminated. There's no dripping grease to mar textiles.

Together, these two cut motor outages and down time—save on maintenance time. Why not get the advantages of this combination? Ask your Westinghouse representative for complete details on Westinghouse motors and controls. Get a copy of the new Loom Motor Starter Booklet, B-5256. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-21645

YOU CAN BE SURE... IF IT'S Westinghouse

Life-Line

MOTORS and CONTROLS

piping repairs cost more now!

No. 460 Iron Body Clamp Gate

You make them less often

by using Dependable Quality

CRANE VALVES

... That's why more Crane Valves are used than any other make

easy access prevents trouble with this valve

Remove just two nuts to dismantle this gate valve for inspection, cleaning, or repairs—without taking it from the line. Reassemble just as easily, knowing that Crane clamp design keeps the bonnet joint snug and accurately aligned. Use Crane Clamp Gates on steam, water, and air, but especially in heavy fluid lines needing periodic cleanout. They'll save time, labor, and encourage regular servicing that prevents valve trouble.

Combining easy access with highly dependable service features, Crane Clamp Gates typify Crane Quality—better valve performance at lowest ultimate cost.

CRANE

CRANE CO., *General Offices:*
836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

SPECIALISTS IN DEXTRINIZATION AND BLENDING OF TAPIOCA, POTATO, CORN AND ALL STARCH PRODUCTS....

How to Get the ONE BEST Dextrine or Starch Product!

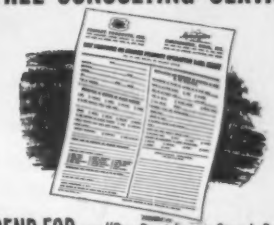
ONE OF SIX MORNINGSTAR LABORATORIES

MORNINGSTAR has developed Textile Dextrine and Starch Products to the highest known standards of performance! Skilled chemists, thru years of continuous research, have achieved a degree of uniform excellence in *all* Morningstar Dextrine and Starch Products, unapproached in the history of the industry.

Modern, scientific laboratory facilities and techniques have been established not only to *improve* but to maintain absolute *control* of quality. Now you can depend upon each succeeding shipment containing the same, fine uniform characteristics. Don't guess. Don't take chances on the Dextrines you use. Morningstar *Scientific* Dextrine and Starch Product Service can give you valuable aid. Tell us about your needs. Let our laboratory staff determine the one best formula for your specific requirements. Call our nearest field man or write us today.

The PAISLEY PRODUCTS Division of Morningstar, Nicol, Inc. is prepared to give you quick, efficient service on all Morningstar products. *Consult your telephone red book.* PAISLEY maintains sales and service organizations in most principal cities.

FREE CONSULTING SERVICE!



SEND FOR our "Dry Dextrine or Starch Product Operation Data Sheet." *Fill in and return it promptly. Our laboratory staff will gladly study your requirements and promptly recommend the one best and most economical formula to improve the specific operation you describe. This valuable laboratory service does not cost you one penny! Take advantage of it NOW!*

ESTABLISHED 1851

Morningstar

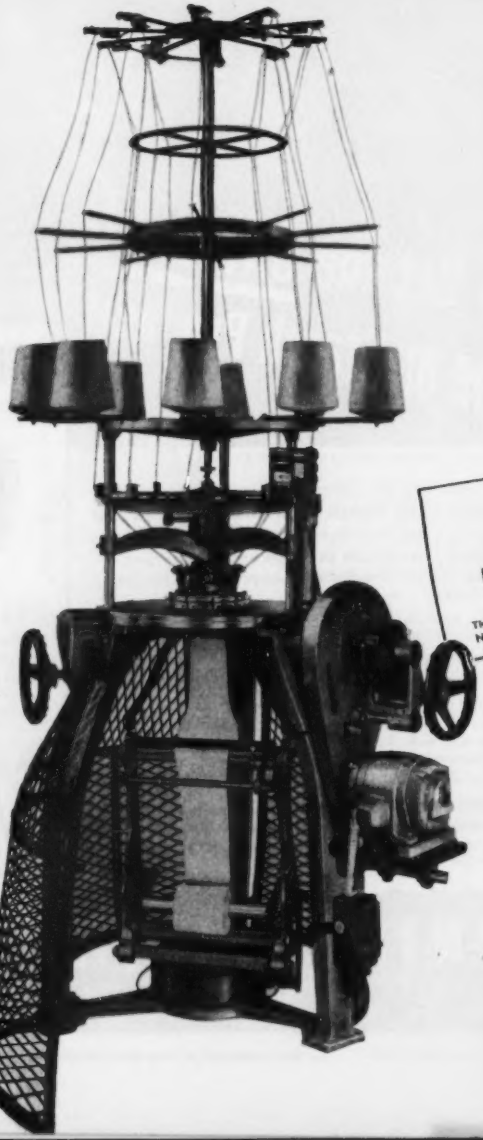
SCIENTIFIC DEXTRINE AND STARCH PRODUCT SERVICE

MORNINGSTAR, NICOL, INC.

630 WEST 51st STREET
NEW YORK 19, NEW YORK

1770 CANALPORT AVENUE
CHICAGO 16 ILLINOIS

SUPREME opens the door to...



HERE IS THE NEW SUPREME RIB PRODUCTION STAR— The MODEL SR

This 7" — 10 Feed Machine is similar to the New Ribbers you will see at Atlantic City.

SEE THE NEW SUPREME SR RIB MACHINE AT THE KNITTING ARTS EXHIBITION ATLANTIC CITY, APRIL 30th-MAY 4th. OR ASK FOR FACTORY PREVIEW.

This ad tells only part of the story. You'll see additional important technical developments when the Model SR is unveiled at Atlantic City. Knitters who want a preview can get it by making an appointment to see the new machine at the Supreme plant, right now.

SUPREME

KNITTING MACHINE CO., INC.

107 JOHNSON AVE., BROOKLYN 6, NEW YORK, N.Y.

BETTER PRODUCTION OF RIB CLOTH

Knitting News

SUPREME ANNOUNCES NEW SUPER-RIBBER

New Supreme Ribber Utilizes Latest Technical Advances To Give Tremendous Production And Quality Bonus

Before buying his next machine, the ribbed cloth knitter should see how Supreme's new Model SR will improve quality and increase production. Some of the design features and exclusive knitting advantages that can be revealed prior to the showing are listed below.

1. Single action, micromatic, dial-elevating and lowering adjustment gives accurate and uniform stitch adjustment at the flip of a finger. Knit as tight or loose a stitch as desired.

2. Sturdy, dogless, tripod construction eliminates pinch lines and insures alignment of all elements. Simplified, instantaneous synchronization of dial to cylinder needles.

3. An exclusive, new, simple method for speedily converting from plain to swiss rib.

4. Individual, channeled cams lock needles in proper position and eliminate smash-ups. Knitter can remove a section and replace it without having to realign needles by hand. Thickness of cams provides large bearing surface for long wear, easier cleaning and less accumulation of dirt.

5. Large open areas around cylinder and dial assure easy cleaning, inspection and maintenance. Greater space between knitting feeds allows easy access to cloth and needles at knitting level.

6. The SR knits a wide range and variety of yarns with uniform quality and a minimum of adjustments. Weak or slubbed yarns will not cause damages or interrupt production.

7. Produces cloth of high elasticity. This assures better shape retention after processing and washings.

8. Automatic control stops machine when predetermined roll size is completed.

9. Roller bearing thrust for entire center drive. Overhead gear-driven dial with center spindle of special alloy steel, hardened and ground.

The new Supreme Model SR will be available in sizes ranging from 7" diameter—10 feeds to 30" diameter—44 feeds.

Two of the many types of ribbed fabric for underwear or outerwear that can be produced on the Model SR.

SUPREME'S PROVEN-IN-USE FEATURES HELP GIVE NEW RIBBER 32 YD. PER HR. OUTPUT AT 100% EFFICIENCY

Supreme's entirely new line of high-speed circular rib knitting machines includes many of the revolutionary production-improving features which have made Supreme's circular jersey machines so successful.

These production-boosting features include:

● *Stationary Yarn Stand*—Permits greater RPM of the cylinder, dial and knitting elements system; lets the knitter use double cone system with "pigtail" double tieups. Assures faster stopping and starting . . . greater safety and efficiency.

● *Revolving, Floating Take-Up and Roll-Up*—Interwinding, roller-bearing supported. Uniform tension assures large, even and compact cloth rolls. Independent support prevents wear on cylinder and outer ring.

● *Unit Motor Drive*—Rugged, smooth-running. Patented multi-disc clutch gives almost instant start and stop. No slippage. Smooth, silent chain drive unaffected by lint or dust.

	PRODUCT	CHEMICAL CLASSIFICATION	PROPERTIES AND USES
COMBINED DETERGENCY & WETTING POWER	CERFAK	Alkyl aromatic sulfonate Anionic—(Flake Type)	Used over full pH range for detergency and/or wetting. Also for compounding cleaning agents.
	CERFAK 1300	Polyoxyethylenealkyl thioether—non-ionic (Liquid)	Combined detergent and wetting agent, effective over full pH and temperature range at low concentrations. Okay in hard or soft water. Fine for raw wool scouring and cotton piece goods.
	CERFAK 1301	Blend of selected non-ionic agents (Liquid)	Excellent for scouring and dyeing woolen and worsted yarns and piece goods. Generally applicable as a detergent.
	CERFAK N-100	Amine condensate (Liquid)	Combined detergency and wetting action. Use with low per cent of alkali. Good for all types of alkaline scouring. Excellent dye bath leveler.
	CERFAK 453	Blend of selected anionic and non-ionic agents (Liquid)	Moderately priced surface active agent. Stable in bleach baths. Will not affect enzymes used in desizing. Non-staining. Wide pH effectiveness. Rapid wetting speed, excellent rewetting ability, good scouring ability. Specially adapted for fabrics to be "Sanforized"
WETTING & REWETTING	SURFAX 1288	Alkylaroyl sulfopropionic ester (Liquid)	Concentrated wetting and rewetting agent. Used in neutral or mildly alkaline solutions. An exclusive Houghton research development.
	SURFAX W. O.	Sulfated fatty ester (Liquid)	Combined penetrant, softener, wetting and rewetting agent. Recognized in textile industry as a standard of comparison.

"WHICH Surface active agent shall I use in my wet processing?"

That is a sensible question, because textile mill men might well be confused. Choosing one out of some 700 surface active agents for a specific application is no simple task! Yet it is essential to find just the *right* one that will do the best job, most economically. Nearly every surfactant combines detergent, wetting, and rewetting qualities in some measure—but usually one of these properties is dominant. The chart above will help you differentiate between Houghton's seven agents which cover the field so well. And to make another point clearer, let's differentiate between the two Houghton trade names, too . . .

USE "CERFAK" when *detergency* is the chief factor in your processing. Each of these five "Cerfak" products, however, were developed after considerable study for particular processing jobs in the textile industries. This wide range permits you to pick the one that fits the job best and reduces your processing costs.

USE "SURFAX" when exceptionally good *wetting and rewetting agents* are needed because they possess little or no detergent advantages. "Surfax" means topnotch *wetting* action, also provides necessary wet-back properties for compressive shrinkage of fabrics.

WRITE FOR BULLETINS

. . . to E. F. Houghton & Co., Philadelphia 33, Pa. . . . or ask the Houghton man to help you select the *right* surface active agent for specific jobs.

. . . products of

E. F. HOUGHTON & CO.

PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

Ready to give you on-the-job service . . .

New High IN FIBER REPELLENCE!

with the new improved DAYCO COT

Here's the cot the whole industry is talking about! The new Dayco Cot has everything—greatly increased repellence for fibers, much longer life, and works with all types of fibers.

Its improved fiber repellence means fewer lap-ups, fewer ends down, cleaner yarn. Its improved wearing qualities make the new Dayco Cot outlast any ordinary roll covering you've ever used. And so versatile, you can use it run-o'-the-mill — on cotton, wool, blends or synthetic fibers!

They're spinning the full proof of this sensational new cotton cot now in the great spinning rooms of the South, where overseers and superintendents have learned to say: "50 million Daycos can't be wrong!" For non-stop profitable spinning, for the long pull ahead, get these new Dayco Cots for your frames. *The Dayton Rubber Co., Textile Division, Woodside Bldg., Greenville, S. C.*

New highs in pretty girls too, *seem to come about every spring, when young men fancy, old men dream, and the new cotton frocks make a pretty package for beauty. And every day Dayco Cots help America's mills dress the feminine millions tastefully, economically, and profitably.*

Dayton Rubber

TEXTILE PRODUCTS FOR BETTER SPINNING AND WEAVING

HIGHLIGHTS of a MODERN DYE BECK

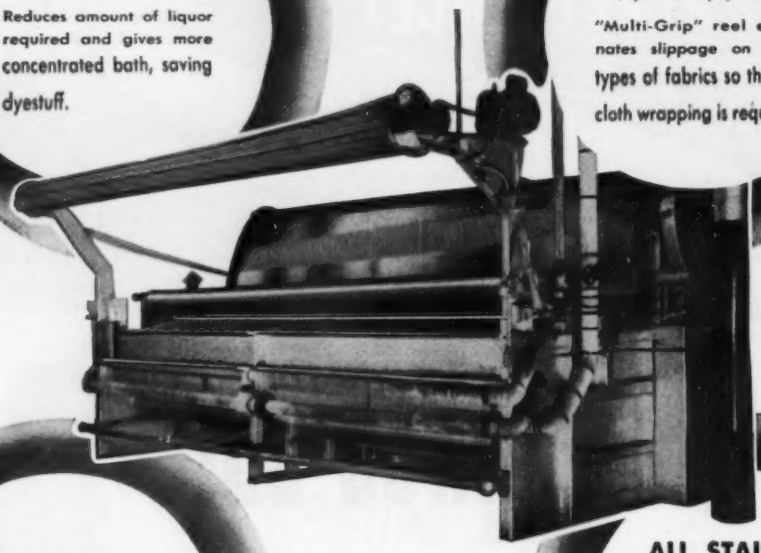
BETTER DYE LIQUOR RATIO

Reduces amount of liquor required and gives more concentrated bath, saving dyestuff.

DRUM TYPE REEL

(optional equipment)

"Multi-Grip" reel eliminates slippage on most types of fabrics so that no cloth wrapping is required.



ROUND BOTTOM

Minimizes tangles and tie-ups, promotes free ballooning of cloth and reduces tension to a minimum.

ALL STAINLESS STEEL

Large capacity (up to 40 strings), all stainless steel tub makes for quick color changes, high volume production and long machine life.

"The Fleet Line"

STAINLESS STEEL DYE BECK

Further information on Request

RIGGS AND LOMBARD, INC.

FOOT OF SUFFOLK STREET, LOWELL, MASS.

"The Fleet Line" — A complete line of modern equipment to successfully handle present day wet-finishing, carbonizing and dyeing requirements.

DOMESTIC AGENTS: — Paul A. Morrison, 1491 Broad St., Providence, R. I. • Harold E. Shaw, 6012 Greenwood Road, Philadelphia, Pa. • Charles H. Dunbar, 1336 South Maple Ave., Los Angeles 15, Calif. • Albert R. Brown, 50 E. Jackson Blvd., Chicago 4, Ill.

EXPORT AGENTS: — Latin America — Balkan States, Egypt, Palestine, India — Meyer, Lyra & Co., 220-229 Fulton St., N. Y., N. Y. • South Africa — Noel P. Hunt, Pty., Ltd., Embassy House, 326 West St., Durban, South Africa • China — G. R. Coleman & Co., Inc., 50 Church St., N. Y., N. Y.

Build Better Beams with...

REEVES "Servo-Control" Slasher Drive

Arrow "A": The Complete Slasher Drive "nests" neatly beneath slasher head-end frame. Arrow "B": Handwheel—for setting Beam drive to maintain desired yarn tension.

Add up all these quality-improving, money-saving advantages of REEVES "Servo-Control" Slasher Drive:

1 Finger-tip control from creep to run speeds by push button.

2 Smooth acceleration and deceleration through 15:1 speed range.

3 Quick, accurate, positive control of running speeds—without fluctuation—either manually or automatically tied in with moisture control.

4 Automatic, uniform tension regulation as beam builds.

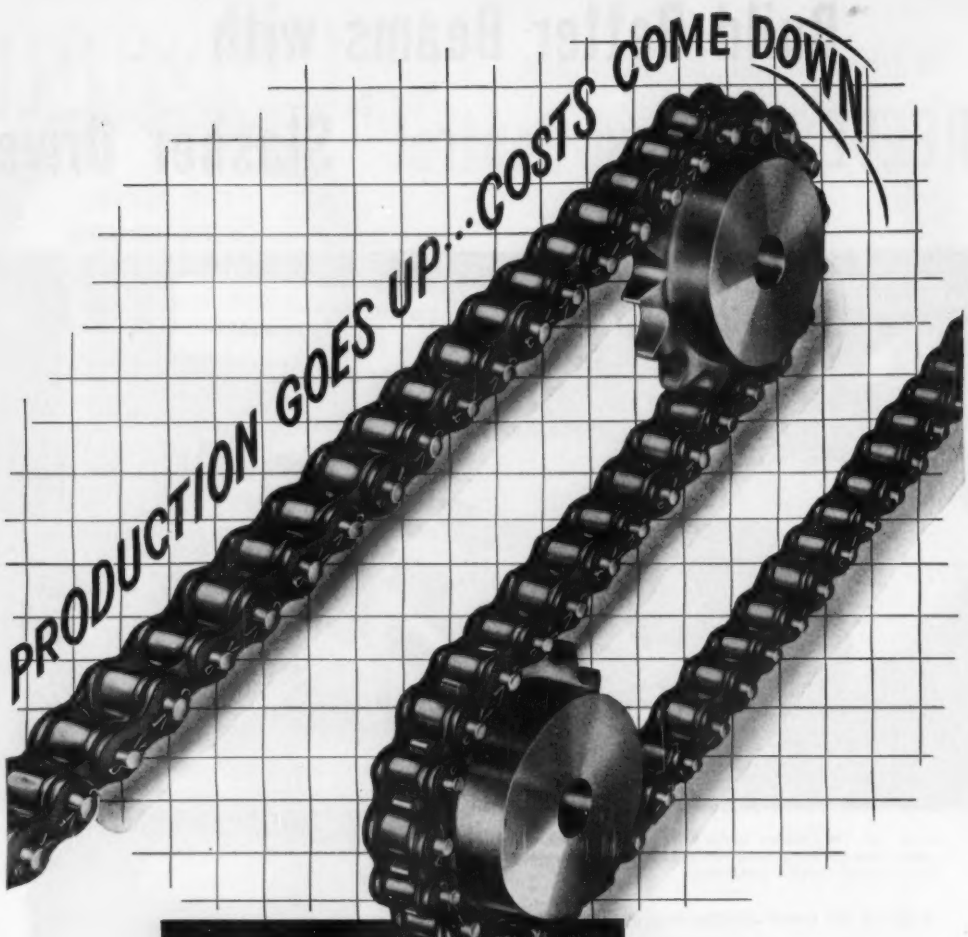
5 Low initial cost; easily maintained by your mill mechanics; no complicated electrical hook-ups.

6 "Nests" under slasher head-end frame.

It will pay you to get the complete story right away. Send for bulletin No. W63-503.

accurate • variable
REEVES *Speed Control*

REEVES PULLEY COMPANY • COLUMBUS, INDIANA
Recognized leader in the specialized field of speed control engineering



with— **WHITNEY**
CHAIN DRIVES

Service records prove the unusual ability of Whitney Chain Drives to deliver full rated horsepower day in, day out, without failure. To you, as a designer or user of equipment, this means time and dollars saved. Production goes up *and stays up*, while *costs come down.*

HERE'S WHY — the rolling contact of finely finished, alloy steel chain, meshing into accurate, cut tooth sprockets eliminate power loss because there is no slippage or friction loss. They deliver constant power smoothly and efficiently.

In addition, they absorb shock loads without breakage. And Whitney's alloy steel construction assures exceptionally long operating life . . . a vital point in keeping maintenance costs down.

But that's not all . . . Whitney Chain Drives simplify design problems. They can be operated on long or short centers without tension or excess bearing loads . . . drive shafts clockwise or counter-clockwise, simultaneously. They can be installed or taken off without dismantling shafts or bearings.

And Remember Whitney Service

In addition to the service facilities of more than 130 Whitney Distributors, Whitney maintains a network of 15 Field Engineering Offices, located throughout the country. The experience gained through more than 50 years of solving drive problems is at your service. From the complete line of Roller, Silent and Conveyor Chains, Whitney Engineers can recommend, without bias, the proper type of drive for your application...the chain drive which will give you the best service at lowest cost. Consult your nearest Whitney Field Office or write us direct for catalog and complete information.

WHITNEY CHAIN COMPANY
211 HAMILTON STREET, HARTFORD 2, CONN.

REDUCE Your Stocks SIMPLIFY Maintenance

WITH

LUNKENHEIMER INTERCHANGEABLE BRONZE VALVES

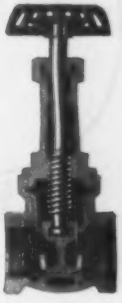
FIG. 2150
150 LBS. S.P.
DOUBLE WEDGE DISC
RISING STEM

Threads and parts of the Fig. 2150 series are designed so that you can interchange bonnets and trim in seconds. Just spin the threads together, tighten, and your *converted* valve is ready for the toughest 150-lb. service.

This feature of simple conversion lets you *reduce* your valve inventory. Figure 2150 is a double-wedge disc, rising stem design. Figure 2151 has a solid wedge disc and rising stem. And Figure 2153 is a single wedge disc valve, of non-rising stem design. Bodies are the same for all three. With only a few valves in stock, you're ready to meet *any* maintenance problems, because you can interchange trim to suit the service . . . and provide new parts as you need them.

Avoid costly "downtime" by stocking Lunkenheimer 150-lb. bronze valves, available in sizes from ¼ in. to 3 in.

FIG. 2151
150 LBS. S.P.
SOLID WEDGE DISC
RISING STEM



Ask your distributor for Circular 574, describing the complete Fig. 2150 series, feature by feature. Or write The Lunkenheimer Co., Box 360R, Cincinnati 14, Ohio.

FIG. 2153
150 LBS. S.P.
SINGLE WEDGE DISC
NON-RISING STEM

BRONZE • IRON • STEEL

LUNKENHEIMER

THE ONE *Great* NAME IN VALVES

L-351-14

the buyer doesn't like the fabric

"It's bad enough trying to meet the production of those new Reading Machines — 15 or more dozen pairs in 8 hours. But, just try to sell against those beautiful fabrics!"

• • •

The new "Reading" Machines are producing full-fashioned stockings of superior quality and at higher speeds than ever before possible. Many exclusive "Reading" features give higher precision in operation and greatly simplified control . . . 30 sections . . . 51 and 60 gauge.
TEXTILE MACHINE WORKS • READING, PENNA.

The "READING"
Full-Fashioned Knitting Machine

VOL. 101; NO. 3 TEXTILE WORLD MARCH, 1951

Here's the PUERTO RICO *Textile Story*

- Why Textile Mills Are Wanted on the Island
- Size of Industry Now and Potential Growth
- Three Inducements to Industry
- Organization to Encourage Industrialization
- Tax Benefits
- Low Minimum Labor Rates
- Transportation Situation
- What Not to Expect
- Description of Leading Plants

By C. W. BENDIGO, *Former Editor, TEXTILE WORLD*

A TEXTILE WORLD REPORT TO MILL MANAGEMENT

CAREFUL SELECTION OF EMPLOYEES pays off in Puerto Rico, where there may be 9,000 applicants for an ultimate 350 jobs. This photo shows psychological testing given at the Textron plant. Examiner is a Puerto Rican, Miss Zelpha Felez de Lopez Estrada.

HEADQUARTERS OF THE NEEDLEWORK INDUSTRY in Puerto Rico is housed in this building. One of the biggest factors in the industry is J. A. E. Rodriguez. The real center of activity, however, is at Mayaguez. The building shown here is on Ponce de Leon Ave. in Santurce.

In "Operation Bootstrap" The Uppers Are Textile

► Puerto Rico is part of the U. S.; but being an unincorporated territory, is able to take unusual steps to welcome industrialization for its 2,250,000 U. S. citizens. The textile industry is the key to its future economic development

"OPERATION BOOTSTRAP" is the designation given to the economic and industrial development of Puerto Rico that has been undertaken by the government of that unincorporated territory of the United States. No other industry has proved more important to the development of the Island than the textile industry.

Second only to growing and processing sugar cane, the biggest industry on the Island is the needle trades. Despite the position of the needle trades, before September, 1949, not a single yard of cloth was known ever to have been woven on the Island. Some materials, however, had been knitted; but even today the amount of knit goods produced in Puerto Rico is quite small, even smaller than the amount of woven fabric.

On September 29, 1949, the first yard of cloth was woven in the Textron plant at Ponce on the south shore of the Island. Since then, two other weaving operations on rayon, have been started. The Textron operation was for manufacturing print cloth, originally 80 square.

On February 16, 1951, there was a celebration in Puerto Rico to commemorate the establishment of the 100th industry under the recent bid of the Island to become industrialized. It is significant that the 100th industry happened to be a textile plant—the operation of Beacon Textiles, Inc., at Palmer, Puerto Rico, about 25 miles east of San Juan.

The editors of TEXTILE WORLD have watched with interest the expansion of the textile industry in Puerto Rico and feel that the manufacturers on the mainland would like to have its impartial appraisal of what has happened on the Island, why it has happened, what is likely to happen in the future, and the significance of the textile industry that is being started up there.

Industry Needs Stimulation

If it were not for special stimulation, Puerto Rico would today be much as it was immediately after the war—an area containing over two and a quarter million people but without any textile-manufacturing plants of any significance. Only through special efforts of the Puerto Rican government—through its instrumental agency, the Economic Development Administration—have many industries been attracted to the Island. The main inducements used are exemptions from taxes for qualified new industries; a low minimum-wage rate; and special assistance, including financial.

IT'S ALL LEGAL. According to Act No. 184, approved May 13, 1948, the Government of Puerto Rico permitted full tax exemptions to be granted to "eligible industries" from July 1, 1947, to June 30, 1959. From June 30, 1959, until June 30, 1960, according to the law, 75% of the tax would be exempted; the following year 50%; the next year 25%; and after June 30, 1962, the exempted industries would have to pay taxes the same as all other industries on the Island.

There has been some talk that the exemptions might continue partly or completely over a longer period; but as the law now stands, all exemption is terminated June 30, 1962.

The exemption applies to virtually all taxes, including income, property, and license taxes (except vehicular).

TYPICAL OF THE KEY PERSONNEL who have gone to Puerto Rico to help start up textile mills is Edward Herbert of Beacon Textiles, Inc. He went there from Lowell, Mass.

It should be borne in mind that at no time is a resident of Puerto Rico or a business operated completely in Puerto Rico subject to U. S. Federal tax. Since Puerto Rico is an unincorporated territory and does not have a right to vote in the government of the United States, it is not subject to taxation.

The tax exemption granted by the government of Puerto Rico could be withdrawn. However, in the act there is this statement: "The legislature of Puerto Rico hereby declares that it considers all tax exemptions granted under provision of this Act as being in the nature of a contract or agreement between the government of Puerto Rico and the industry receiving the benefit of the exemption, and that it proposes not to adopt any legislation which may impair or limit such exemption or which may defeat the purpose of this Act."

The Act specifically exempts cotton, silk or rayon hosiery and, as amended by Act No. 355 of May 14, 1949, "men's and women's outerwear, including, but not limited to, dresses and coats, providing the cutting of material therefor is done in Puerto Rico." In addition, the Act says: "Any article of commerce manufactured mainly from textiles, and which is produced in Puerto Rico, provided 90% or more of the cost of textiles used in the manufacture thereof covers textile products provided in Puerto Rico; provided, however, that for the purpose of computing the said 90% any lace, drawn work mesh, ribbons, braids, rickrack, and narrow elastic and non-elastic fabrics used in the article shall be disregarded." Of course, the Act exempts many other industries and products.

LOW WAGE NOT ALL VELVET. The minimum-wage advantages that manufacturers may expect in Puerto Rico may appear to be greater than they actually are once operations are started. There are two explanations for this condition. One is that the low minimum-wage rate cannot be converted immediately into a comparatively low unit cost of product because of the expense of training operators. The government of Puerto Rico recognizes this situation and is taking steps to help defray the cost of training employees required in new industries.

The other factor that should be evaluated when considering the low minimum-wage rate that may prevail is that the wage rate may be revised upward at any time, and that many rates in Puerto Rico are constantly being revised upward.

The minimum rate for the textile industry at the end of the year was 30¢ per hr. The minimum rate for longshoremen, however, was $1.10 an hour. Labor unions on the Island and pressure from within the United States are both tending to force up labor rates in Puerto Rico. However, it may be expected that the difference between Puerto Rican and U. S. rates may continue to be considerable.

Wage rates in the textile industry now range between the minimum of 30¢ an hour and the maximum of about 45¢ an hour, although on a piece-work basis individual operators have earned as high as $35 a week. That amount of money in Puerto Rico is considered quite high.

It would be unfortunate if minimum labor rates in Puerto Rico were ever allowed to reach the level prevailing in the United States. If it were not for some special inducement, as indicated earlier in this article, it would hardly be economically feasible for textile mills to start up operations in the Island.

The third inducement provided by the government of Puerto Rico deserves description, since it may serve as an outstanding example to show what can be done by any area in attracting industry.

PUERTO RICO DEVELOPMENT CO. Well before the Industrial Tax Exemption Act of Puerto Rico was passed in 1948, a Puerto Rico Industrial Development Co. was created (in 1942) with mainland offices in New York and Chicago. Back of the Development Co. for almost a decade has been Teodoro Moscoso, Jr., president and general manager.

During the latter part of 1950 the Development Co. became part of an Economic Development Administration, of which Mr. Moscoso became administrator. Integrated under the Economic Development Administration, in addition to the Puerto Rico Industrial Development Co., were other agencies that were important to the expansion and stabilization of the economy of the Island. Chief of these others are the Fridbank (the Puerto Rico Industrial Development Bank), P. R. Transportation Authority, and P. R. Visitors Bureau ("tourism").

Some of the things that the EDA does to attract business is to assemble facts and figures that will be of value to industrialists who might be looking to Puerto Rico for a factory site. It invites industrialists to visit the island and makes arrangements for them to examine possible plant locations.

It provides them with facts about labor, taxes, markets, transportation, financial facilities, communications, power, water supplies, building and construction costs, insurance, trade marks, patents, copyrights, living conditions, statistics on climate, and so on. Its various facilities are distributed through an industrial division, an engineering division, and an industrial-relations department to assist not only prospective manufacturers but also manufacturers operating on the Island.

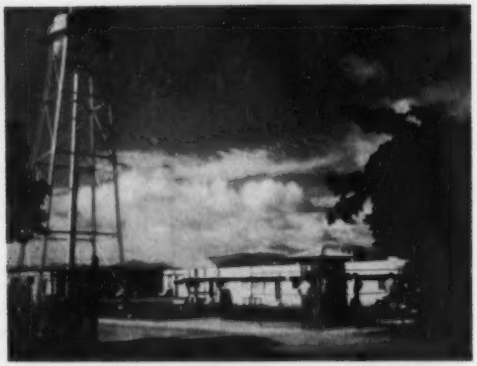
The Development Co. has engaged Arthur D. Little, Inc., of Boston, to assist businessmen and to advise the government agency.

Puerto Rico does not hide its light under a bushel. It has contracted with Hamilton Wright, Jr., for the services of the Hamilton Wright Organization to promote the advantages of manufacturing opportunities and to attract tourists to Puerto Rico.

"FACTS FOR BUSINESS MEN." A textile man who is interested in finding out about the opportunities in Puerto Rico should obtain a copy of the booklet published by the Puerto Rico Industrial Development Co. entitled "Facts for Business Men." It will provide answers to most of the questions a textile man may want to know about before making a trip to Puerto Rico or even possibly before visiting one of the offices of the Development Co.

It is the established policy of the government of Puerto Rico to take definite steps to attract industry to the Island. It is essential that the Island become industrialized, since it

LACES AND OTHER RASCHEL FABRICS are manufactured in this building located in the metropolitan area of San Juan. This angle shows the exterior of Colette Mfg. Co. on Ponce de Leon Ave. in Santurce.



THE LARGEST TEXTILE OPERATION in Puerto Rico is Textron Puerto Rico, Inc. In addition to this plant at Ponce, Textron has started a tricot plant at Humacao and plans more units.

TEXTILE PLANTS IN PUERTO RICO

Name of Plant and Official in Charge	*Mail Address*	*Product*	*Number of Production Machines*
Beacon Textiles, Inc. Richard E. MacDonald	Ochoa Bldg. Box 1182 San Juan	Rayon cloth (gray)	200 looms
Consolidated International Industries, Inc. Carl Whitley	Aricibo-Utuado Rd. Aricibo	Men's and children's hose	100 circular machines
Graichen Fabrics, Inc. Julio Rodriguez	Martin Gonzalez Ward Carolina	Worsted fabrics	60 looms
La Plata Industries Corp. Louis Kulin	La Plata Aibonito	Textile wastes	(hand classification)
Olympic Corp. Francisco Carvajal	Fdez. Juncos Ave. Santurce	Men's undershirts and polo shirts	32 circular machines 50 sewing machines Bleach and dye
Primo Knit Mills M. Paradiso	207 Font Martelo Humacao	Veils	10 Raschel machines
Puerto Rico Fabrics, Inc. F. Verreault	K 28 Naguabo Rio Blanco Ward Naguabo	Infant's hose	11 circular machines
Puerto Rico Hosiery Mills, Inc. Cesar A. Silva	Santana Ward Box 835 Arecibo	Full-fashioned hosiery	8 42-gage machines (18 sect.) 8 51-gage machines (32 sect.) 7 60-gage machines (4 sect.)
Puerto Rico Arthur Contini	Vega Alta	Rayon cloth (gray)	150 looms (more planned)
Puerto Rico Woolen Textile Corp. Helen Frank	Juncos	Woolen yarns [illegible]ops	41 frames (pilot operation)
Rugcrafters of Puerto Rico, Inc. Richard C. Kline	K 11 HI Sabana Abajo Carolina	Rugs and [illegible]verings	Hand operation
Senorita Hosiery Mills Ishmael Crawford	Gurabo	Full-fashioned hosiery	4 45-gage machines (24 sect.) 6 51-gage machines (24 sect.)
Textron Puerto Rico, Inc. James Flack	Ponce	Cotton yarn and print cloth	25,000 spindles 560 looms
Albert Goode Medin of Puerto Rico, Inc. Guy Barbet	Aguadilla	Silk bolting cloth	10 looms (75 planned plus 10,000 spindles)

Where to Get More Information

IN NEW YORK AREA:

Puerto Rico Industrial Develop't Co.
4 West 58th Street
New York 19, N. Y.

or

Arthur D. Little, Inc.
420 Lexington Ave.
New York 17, N. Y.

IN NEW ENGLAND AREA:

Arthur D. Little, Inc.
30 Memorial Drive
Cambridge, Mass.

IN WASHINGTON, D. C. AREA:

Office of Puerto Rico
1026 17th Street, N. W.
Washington, D. C.

IN CHICAGO AREA:

Economic Development Administration
120 South LaSalle Street
Chicago, Ill.

IN PUERTO RICO:

Puerto Rico Industrial Develop't Co.
302 Fortaleza Street
San Juan, Puerto Rico

Puerto Rico Personal Income Tax Rates*

NORMAL TAX — FLAT 7%

Net Income	SURTAX RATES Amount	Rate	Tax	Aggregate
Not over $2,000	$2,000	5%	$100	$100
$2,000 to 4,000	2,000	8%	160	260
4,000 to 6,000	2,000	12%	240	500
6,000 to 8,000	2,000	15%	300	800
8,000 to 10,000	2,000	19%	380	1,180
10,000 to 12,000	2,000	23%	460	1,640
12,000 to 14,000	2,000	26%	520	2,160
14,000 to 16,000	2,000	29%	580	2,740
16,000 to 18,000	2,000	32%	640	3,380
18,000 to 20,000	2,000	34%	680	4,060
20,000 to 22,000	2,000	37%	740	4,800
22,000 to 26,000	4,000	40%	1,600	6,400
26,000 to 32,000	6,000	44%	2,640	9,040
32,000 to 38,000	6,000	48%	2,880	11,920
38,000 to 44,000	6,000	54%	3,240	15,160
44,000 to 50,000	6,000	56%	3,360	18,520
50,000 to 60,000	10,000	58%	5,800	24,320
60,000 to 70,000	10,000	60%	6,000	30,320
70,000 to 80,000	10,000	63%	6,300	36,620
80,000 to 90,000	10,000	66%	6,600	43,220
90,000 to 100,000	10,000	67%	6,700	49,920
100,000 to 150,000	50,000	68%	34,000	83,920
150,000 to 200,000	50,000	70%	34,000	118,920
200,000 and over		72%		

* Rates given are for 1949; 1950 should be similar

Deductions from income for tax purposes are not so "numerous" in Puerto Rico as in the States.

cannot possibly support its rapidly growing population on an agricultural economy alone.

It should be borne in mind that the island of Puerto Rico is only 100 mi. long by about 30 mi. wide and that the largest portion of it is mountainous. The concentration of people on the island (650 per sq. mi.) is difficult for anyone in continental United States to visualize.

Even if all the tillable area on the island were utilized for growing food, the population would still face a shortage. Actually, most of the tillable land is devoted to growing sugar cane.

Puerto Rican economists point out that land devoted to sugar cane has a higher dollar productivity for the inhabitants than it would if it were devoted to diversified food crops and permits the purchase of larger quantities of food than could be grown on the land.

No Threat to U. S. Industry

Since the government of Puerto Rico has been taking positive steps to attract industry and has been publicizing the advantages of establishing an industry in Puerto Rico, there have been complaints—some of them from textile men—concerning the danger of the program in Puerto Rico to the economy of the U. S.

The possibility of any considerable danger is remote. The Island is small and could support only a small industry.

Although accurate figures are not available, it is known that the support of Puerto Rico represents a sizable drain on the treasury of the United States. However, if the Island can develop itself industrially, it is entirely possible that it can become self-supporting.

In practice, meeting competition and making profits in Puerto Rico may be as difficult as it is in the U. S. Somewhat offsetting the advantages of tax exemption, low minimum wage, and help from the government in many ways, there are such things as the need for a larger inventory, training costs, high percentages of waste, and lower efficiencies (at the present time anyhow), and the need to send most textile products to the United States for further processing, such as finishing.

GAPS NEED FILLING IN. Until now, the principal aim of the Puerto Rican Development Co. has been to get any industry; and emphasis has been placed on the textile industry. So far as the textile industry is concerned, a more advanced phase has now started. This phase involves not just establishing any sort of textile plant, but getting textile plants that can best

fit in with the economic requirements of the Island. For example, textile plants are needed that could take advantage of natural raw materials on the Island or that could supply the native needle trades.

At present, an enormous amount of textiles are sewed on the Island, but not too many are cut. In most cases, cut garments are sent to the Island for sewing and then are shipped back to the U. S. Until such a time as a finishing plant is established on the Island, it will be relatively unattractive for Puerto Rican weavers to supply the Puerto Rican needle trade.

Part of the product of Textron Puerto Rico is finished in the States and then returned to Puerto Rico. When the Textron tricot plant is in operation, about half its fabric production will be used in Puerto Rico.

THE LANGUAGE PROBLEM. In starting up a plant in Puerto Rico, the language problem can be troublesome. While it is true that many of the inhabitants understand English and that English is taught in all public schools, the language most universally used is Spanish. It is very easy for anyone speaking English to be misunderstood, and in some cases he may not be understood at all. It is essential that the first line of supervision in any textile plant be able to speak Spanish. It is advantageous that everyone be able to speak and understand that language.

LAWS FOR WORKERS. The laws governing workers are different in Puerto Rico from those in the U. S. Restrictions affect the working of women and minors at night. Laws in regard to overtime are similar to those in the U. S.; work beyond 8 hr. in any day must be paid for at time and a half. Having a nurse available is mandatory if as many as 50 persons are employed.

Fortunately, the Industrial Relations Div. of the Economic Development Administration can be of great assistance in keeping a new manufacturer from running afoul of the law. It can help the manufacturer set up records so that if and when it becomes necessary to let an employee go, the mill will not be forced later on to reinstate him. For example, during the past year the Textron plant in Ponce had employees bringing action against the mill on 27 occasions because of being discharged, but their records were such that the mill was upheld in every case.

HIGH CONSTRUCTION COSTS. A word should be said about construction costs in Puerto Rico, particularly since all lumber and steel work and all electrical supplies must be shipped to the Isand, usually from the U. S.

About the only building material produced locally is cement. The government has done much to keep the cost of cement low; but construction costs in Puerto Rico are still high, even though buildings do not require provision for heating.

The Beacon buildings cover 70,700 sq. ft. Construction costs ran slightly over a half million dollars. The 33,000 sq. ft. in the plant of Puerto Rico Rayon Mills, Inc., cost $200,000, including air conditioning. These two plants were built more recently than the Textron plant.

Construction in Puerto Rico should be such that the buildings can withstand hurricane stresses. It is even advisable to figure in earthquake stresses, though trembles are rare.

TRANSPORTATION FACILITIES. While we are reviewing drawbacks to the growth of the textile industry, we should not overlook the railroad situation. Quite recently the railroad, which almost runs completely around the Island, was taken over by the Railroad Labor Union. Its costs are high compared to the cost of trucking in most areas, and it cannot be considered for the transportation of passengers. However, Puerto Rico has good trucking facilities and reasonably good plane facilities.

The Island boasts of 2,500 mi. of road, but many of them need repair. They are now being repaired, and other good roads are being built and in some areas already exist.

POWER COSTS. Much of the power produced on the Island takes advantage of the flow of water from

Here's Immediate Potential Market For Puerto Rico

Commodities	Unit	Quantity	Dollars
COTTON MANUFACTURES			
Wearing apparel			
Crochet slippers	Pair	13,670	27,924
Handkerchiefs	Doz.	3,701,432	7,734,574
Gloves	Doz. pr.	894,097	9,317,542
Men's and boys' clothing	Doz.	168	1,416
Women's wearing apparel			
Dresses, skirts, and waists	Doz.	16,379	715,416
Nightgowns and pajamas	Doz.	66,308	938,600
Underwear	Doz.	41,887	503,494
Collars, cuffs, and bows	Doz.	9,561	55,922
Slack suits	Doz.	14	1,944
Children's wearing apparel			
Dresses	Doz.	132,097	1,053,208
Underwear	Doz.	298	3,938
Infants' wearing apparel			
Infants' wear	Doz.	142,985	1,042,916
House furnishings			
Bridge sets, table covers, scarves, towels, napkins	Doz.	5,654	66,854
Sheets and pillow cases	Doz.	5,109	47,910
Cotton lace	Yd.	273,256	108,063
Other cotton manufactures			251,915
Total value of cotton manufactures			21,875636
LINEN MANUFACTURES			
Wearing apparel			
Handkerchiefs	Doz.	705,662	2,769,683
Gloves	Doz.	171	1,575
Women's and children's dresses			560
House furnishings			
Bridge sets, luncheon cloths, table covers, scarves	Doz.	18,572	312,334
Towels and napkins	Doz.	39,640	206,933
Doilies	Doz.	947	6,841
Other linen manufactures			120,099
Total value of linen manufactures			3,418,205
WOOL MANUFACTURES			
Wool booties	Doz.	752	1,718
Tapestries	No.	55,680	69,720
Other wool manufactures			3,750
Total value of wool manufactures			75,188

the mountains and is generated from water power. However, this is by no means sufficient for the industry on the Island, and oil must be imported for the generation of electricity. Practically all electrical contracts carry a provision increasing the rate if the price of oil should increase. About the best a manufacturer can expect is a 1.5¢ per kwh. For a small operation, he would have to expect to pay more. It is expected that as more industries come to the Island, the rates will be reduced.

The advent of air transportation has done much to make Puerto Rico accessible as a manufacturing site. Planes travel between the U. S. and Puerto Rico in a matter of a few hours, and personal transportation costs are lower by air than by any other means. It is conceivable that air-freight rates may be reduced to such an extent that planes could be used for higher-priced textile products. The government of the Island is encouraging the growth of air-freight lines between Puerto Rico and the United States.

HERE ARE SOME "DON'TS". Perhaps we should set forth a few don'ts for anyone who is contemplating manufacturing textiles in Puerto Rico.

In the first place, don't plan to pull up a plant by its roots and move it from the United States to Puerto Rico. You can do so, but you cannot get tax exemptions, since the law is clear in that it does not apply to plants set up in Puerto Rico at the expense of shut-downs or unemployment on the mainland. Don't put a plant in Puerto Rico and expect to find experienced help or to pirate experienced help from other textile plants already established in the Island.

In spite of the great unemployment on the island, don't expect to have low absenteeism and a low turnover. Many of the workers are anxious to learn textile jobs so that they can move to the mainland and get the much higher wages being offered in the States. You can expect many highly skilled operators to return to the Island after being disappointed in the States, but their pride will probably prevent them from returning to your particular plant.

Don't expect to find supplies and machine-shop facilities as conveniently available in Puerto Rico as on the mainland. One or two mill-supply people send representatives to Puerto Rico, but there has been no textile-mill supply house set up. There's not likely to be one until the size of the textile industry on the Island becomes much larger.

There are machine shops, but the experience of at least one mill (Textron) has proved that it could do work in its own shop more cheaply, rapidly, and efficiently than it could have it done by outside shops. For a plant located in an isolated area, one's own machine shop is really essential.

In general, don't expect conditions to be the same as they would be in the U. S. However, it can be said that the adjustment between a New England concern operating in Puerto Rico is probably no greater than the adjustment that would be needed for the same concern to operate in the South—with the exception of the language problem.

Salaried employees should not come to Puerto Rico expecting tax exemptions. They won't get them. It is true that they will not have to pay U. S. Federal income taxes, but the Island income tax for all practical purposes is just as steep. For example, on a $10,000 net income the tax would be around $2,000.

Don't expect the living costs in Puerto Rico to be lower than in rural U. S., in spite of no need for heating. Food, for example, costs more. Land in Puerto Rico is scarce; so housing costs considerably more.

A manufacturer should not expect the minimum wage rate for the textile industry to remain at 30¢ an hour. The situation in regard to minimum rates is far from satisfactory, since each branch of the textile industry has its own minimum rate.

For example, the rate for knitters on full-fashioned hosiery machines was raised last October by "Committee 7" from 33¢ an hour to 40¢ an hour. "Committee 5" recently unan-

Textile Industry (Shipments From Puerto Rico to the States)

Commodities	Unit	Quantity	Dollars
SILK MANUFACTURES			
Wearing apparel			
Handkerchiefs	Doz.	77,909	943,411
Men's ties	Doz.		2,474
Womens's wearing apparel			
Dresses	Doz.	192	12,165
Blouses	Doz.	310	9,461
Underwear	Doz.	1,918	123,985
Scarves	Doz.	61,444	1,215,775
Other silk manufactures			478,735
Total value of silk manufactures			2,786,006
RAYON AND NYLON MANUFACTURES			
Rayon manufactures			
Wearing apparel			
Rayon handkerchiefs	Doz.	3,488	16,974
Chiffon handkerchiefs	Doz.	1,371	8,847
Gloves	Doz. pr.	14	90
Corde handbags, unfinished	Doz.	2,104	23,751
Women's wearing apparel			
Blouses	Doz.	41,909	1,414,933
Underwear	Doz.	94,820	2,711,902
Gowns (including bed jackets)	Doz.	8,023	352,479
Children's wearing apparel			
Dresses	Doz.	81	2,185
Underwear	Doz.	400	5,976
Infants' wear	Doz.	8,366	220,643
Other rayon manufacture			293,285
Nylon manufactures			
Gloves	Doz. pr.	2,701	23,799
Women's underwear	Doz.	315	23,500
Other nylon manufactures			32,634
Total value of rayon and rayon manufactures			5,130,998
MISCELLANEOUS			
Leather gloves	Doz.	20,236	450,980
Grand Total			33,736,833

Source: Monthly reports, Customs District of Puerto Rico

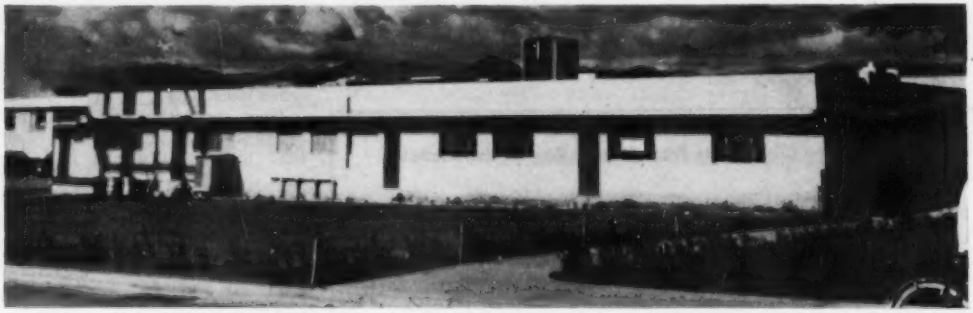
imously recommended that the minimum rate for glove manufacturing be increased from 35¢ an hour to 45¢ an hour. At the time of this writing, there is no definite word that the textile-industry minimum of 30¢ an hour will be increased; but there have been discussions about an increase.

The Industrial Department of the EDA does not play up the low minimum rates as a continuing advantage. They frankly tell you to expect the minimum rates to be raised slowly. Some textile manufacturers on the Island, however, are not particularly worried about a high minimum rate, since they feel that if a rate should ever approach that of the U. S. it would be somehow or other based on similar workloads. Just how it would be worked out is not clear. However, since the rates for the various industries are worked out by various committees, almost anything might happen.

HELP IN TRAINING OPERATORS. The Department of Education of Puerto Rico has a provision whereby it will pay for instructors to train Puerto Ricans in industrial skills. The schools may be set up under the direction of a mill, with the curriculum approved by the Department of Education. The department will then pay for the instructors to teach the prescribed courses.

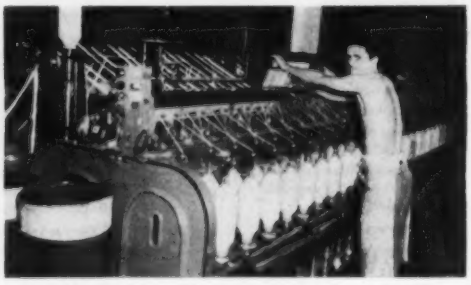
Students take the instruction on their own time. The few schools that have been set up have been successful in reducing costs of training. There is a great deal of interest on the part of the naive Puerto Ricans to learn industrial skills. They are quite willing to attend the courses on their own time.

It should be said that a Puerto Rican worker, in general, is willing to work, is a hard worker, and is quick to learn. Practically every mill man interviewed felt that the Puerto Rican



THE LARGEST TEXTILE OPERATION in Puerto Rico is housed in these buildings, which occupy 155,000 sq. ft. At the left is the warehouse; nearest the camera is the Textron office; and beyond is the mill in which was woven the first yard of cloth ever produced in Puerto Rico.

THE TWO SACO-LOWELL PICKERS used are shown here being run by a native operator, Marcos Alicea.



SLUBBERS are the only roving frames used in the setup at Textron Puerto Rico. Operator is Reinaldo Citron.

Textron Plant Was First And Is Still the Largest

► **Unit was built by Puerto Rico Industrial Development Co.; has 25,000 spindles and 560 looms. It is to be operated by Puerto Ricans. It has a comprehensive training program.**

THE LARGEST TEXTILE MANUFACTURING plant in Puerto Rico is Textron Puerto Rico at Ponce, on the south side of the Island. This mill contains 25,000 spindles and 560 looms for manufacturing print cloth. In the Textron Puerto Rico mill was woven the first yard of cloth ever produced, so far as is known, in Puerto Rico. There is no record of hand weaving ever having been done on the Island.

wants to learn his job as quickly as would a new employee in the U. S. None could see much difference between the training of a Puerto Rican employee and the training of an employee or the mainland, with the possible exception that more diplomacy and tact are needed.

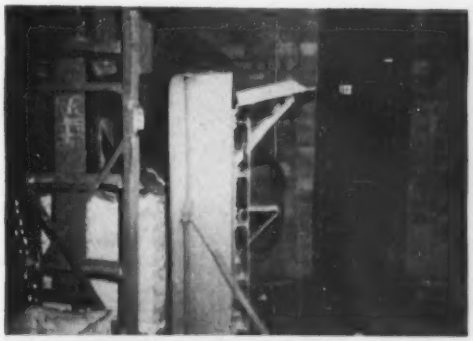
Instructors and supervisors would have to be careful not to offend the "honor" of the Puerto Rican worker. If he should be offended or if something on his job should not go well, he might be prone immediately to walk off the job and go home. Later, his pride might keep him from returning to work.

Textile-mill men in Puerto Rico are in a dilemma regarding employees. Practically all of them prefer to employ men rather than women because of fewer legislative and personal problems regarding men. Due to the war situation, however, many of the better male employees have been drafted. In one case, 6 out of 28 knitters were inducted by the Armed Services. In other cases, instructors who are vitally needed to get a plant started up were drafted.

Until the defense situation became acute, deferments for 30, 60, or 90 days were not difficult to obtain; but as the war situation got serious, draft deferments became almost impossible.

An interesting sidelight is that in many cases the draftee was rather glad to be drafted and did not care to cooperate with the mill to obtain temporary deferment.

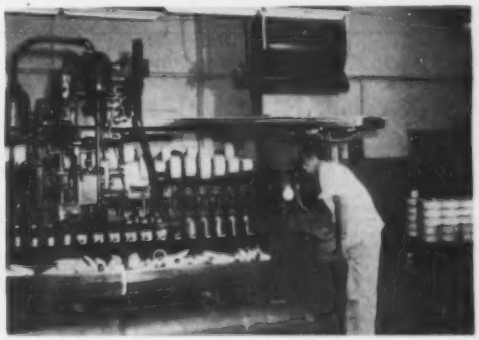
The establishment of job loads for plants operating in Puerto Rico need present no special problems if the job loads are set up on a fair basis, preferably with the benefit of time-study. The Puerto Rican worker will have no preconceived notion as to what job loads are. In some instances, a job load for a Puerto Rican has, on a machine basis, exceeded those generally found in the States.



THE WASTE HOUSE is separated from the warehouse by tiled walls. It has separate bins for each type of waste. In the foreground is the waste-baling machine.

THIS VIEW shows approximately half the 79 spinning frames in the plant. The two in the foreground are two of the 42 300-spindle machines for spinning warp yarns.

TRAINING A GROUP of spinning fixers is J. D. Compton (second from right) formerly of Anderson, S. C. Preparatory-process training is done on machines actually in production.

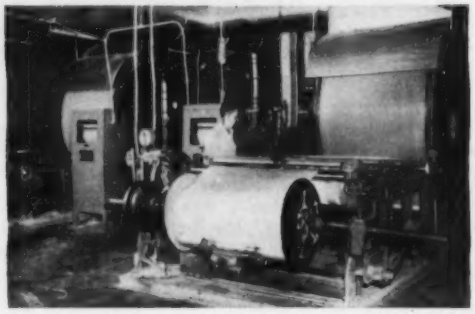


SPOOLING AND WARPING equipment used in the plant is Barber-Colman. Robert Yelton, shown in the picture, was brought from the States to act as a supervisor in the winding and warping department.

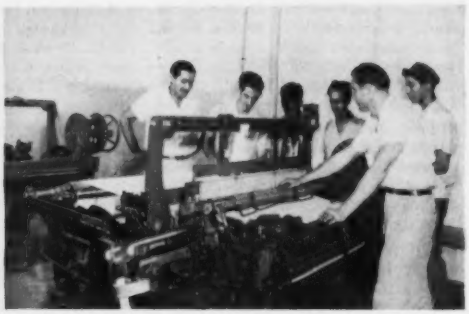
START OF OPERATIONS. In beginning operations at Ponce, the mill management undertook the stupendous task of starting up virtually the whole plant at once. Practically all training was done right on the machines while they were in production Since then, however, a classroom has been set up and is used for training loomfixers. In addition, a supervisory training program was instituted. Supervisory training was by the conference method. All supervisors, including Superintendent H. H. Robbins, met each week for 20 weeks last year.

The loomfixing course ran for 13 weeks. Last December, 29 fixers had completed the course. It is the plan of the mill to give every weaver an opportunity to learn loomfixing.

Although 25 instructors were origi-



SLASHERS used were built for Saco-Lowell by West Point Foundry. They are controlled by Brown instruments, which can be seen near William Rivera (right) and Lawrence E. Moore, formerly of Greenville, S. C.



THE LOOMFIXER training school, which graduated 29 last December, is operated by John W. Boysworth, formerly of Charlotte, N. C. (Listed elsewhere are the training elements used in the program.) Mr. Boysworth is second from the right.

ITS OWN MACHINE SHOP was found to be necessary to keep down maintenance costs at the Ponce plant, as outside shops were found unable to service the mill adequately. Operating gear cutters here is a Puerto Rican, Francisco Ortiz.

PSYCHOLOGICAL TESTING is done in the industrial-relations department. The examiner is Miss Helen Tou. In charge of the industrial-relations department is a Puerto Rican, José A. Aneses. He was formerly with the Puerto Rican Development Co.

Loomfixer Training Elements Used at the Textron Plant

I. Loom alignment
- a. Level loom
- b. Race board alignment
- c. Lay-end plate alignment
- d. Reed alignment
- e. Back box plate alignment

II. Picking motion
- a. Assembling pick cam
- b. Setting pick cam
- c. Assembling pick shaft and bearings
- d. Setting pick shaft and bearings
- e. Assembling parallel motion
- f. Assembling lugs and power straps
- g. Setting parallel motion
- h. Assembling parts for boxing shuttle
- i. Steps in setting shuttle boxes
- j. Attaching picker
- k. Picker settings

III. Shedding motion
- a. Assembling shedding motion
- b. Timing harness cams

IV. Beating-up motion
- a. Assembling beating-up motion
- b. Centering lay in loom

V. Protector Motion
- a. Place springs in frogs
- b. Setting frogs
- c. Assembling protector rods and daggers
- d. Setting protector
- e. Assembling of dagger stop
- f. Setting dagger stop
- g. Setting knock off motion

VI. Let-off motion
- a. Assembling let-off motion
- b. Setting let-off motion
- c. Setting vibrating whiproll cam

VII. Take-up motion
- a. Assembling take-up motion
- b. Setting take-up motion

VIII. Filling change motion
- a. Assembling filling change motion
- b. Setting filling cam
- c. Assembling shuttle feeler
- d. Setting shuttle feeler
- e. Check lay and battery position
- f. Setting lay and battery
- g. Assembling battery parts
- h. Setting battery parts

IX. Internal expanding brake
- a. Assembling brake parts
- b. Setting internal expanding brake

X. Dry disc clutch
- a. Attachment of clutch parts
- b. Adjusting dry disc clutch

XI. Warp stop motion
- a. Assembling stop motion parts
- b. Assembling knock-off
- c. Setting stop motion

XII. Motor stand
- a. Assembling motor stand
- b. Setting motor stand and motor

XIII. Replacing warp

XIV. Defects and causes

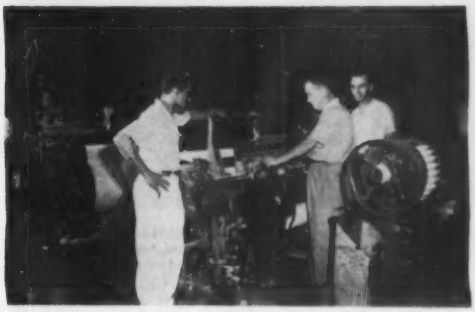
XV. Cooperation

nally brought to Puerto Rico, at the turn of the year only six still remained. To take care of instructors and supervisory employees brought from the States, the mill operates a guest house in Ponce. It is able to accommodate as many as 18. Instructors are housed in the guest house at no cost to them. The agreement between the mill and the instructors normally is for six months. In addition to living expenses, it includes transportation to and from the United States, and a bonus.

FEW WOMEN. Of the 535 employees in the mill at the turn of the year, only 13 production workers were women. Women are not used extensively because of a local law against pregnant women being employed between 10 p.m. and 6 a.m. In addition, women may not be employed over three weeks on a night shift. Another reason for the mill in Ponce not employing women is a higher turnover and a greater absentee problem among women.

MEN ARE USED almost exclusively in the cloth room at the Ponce plant of Textron Puerto Rico. Nearest the camera is a Puerto Rican inspector, Angel L. Cruz, who is being supervised by the weave-room overseer, William A. Snead, formerly of Anderson, S. C.

A SUPPLY INDEX system is checked by Ontero Rodriguez. The sources of nearly all supplies are in the United States, over 1,000 miles away. The plant tries to keep on hand a minimum of three months' and a maximum of five months' supplies of all sorts.



A CONFERENCE is held in the weave room, which contains 560 Draper X-2 looms running at 192 ppm. Conferring here are (right to left) Noyce L. Padgett, overseer, formerly of Greenville, S. C.; Hubert H. Robbins, formerly of Opp, Ala., and Godben Santiago, supervisor.

TOP BRASS of the Textron plant at Ponce is, left to right, James M. Flock, executive vice-president; Luis C. Roever, controller; and Felix M. Givorio, merchandise manager. They are having a conference in Mr. Flock's office.

It was said that Puerto Rico's requirement to pay women half-time for four weeks before and four weeks after the birth of a child was not an important factor in Textron's decision to use as few women as possible.

The plant rotates its shift weekly. Because of the 10 p.m. curfew on women working, shift changes are at 10 p.m., 6 a.m., and 2 p.m.

The Textron plant at Ponce is in a rather arid area. The water is so hard that it has to be softened even before it can be used in the humidification system.

Plans at Ponce, in addition to print-cloth production, call for a finishing and screen-printing plant. Work on this plant may be started sometime in 1951.

Electric-power costs at Ponce are based on the peak demand experienced during many months. The actual power works out at something like 1.5¢ per kwh. By running seven days a week and watching seeping factors, it might be possible to operate at a power cost of near 1¢ per kwh.

The plant contains 155,000 sq. ft. All the equipment in the plant is new, with the exception of one Roto-Coner. The building was constructed by the Puerto Rican Development Co., and the spinning equipment was all laid out and supplied by Saco-Lowell Shops. The looms are all Draper Model X-2 running at 192 ppm.

In addition to the Ponce mill—which started running 80x80 cloth weighing 4 yd. per lb.—Textron is installing a tricot mill at Humacao, Puerto Rico. The tricot mill, when in operation, will produce two-bar acetate and nylon fabrics that will be finished, cut, and sewed on the island. It is estimated that about half the garments produced will also be sold locally. By the time this article appears, the plant will have just started operation. Training of operators, however, began last year.

HEAD MAN. The head operations man of Textron Puerto Rico is James Flack, executive vice-president. He is in charge of both the print-cloth mill at Ponce and the tricot plant at Humacao. Of the print-cloth mill he said at the turn of the year, "We are satisfied with the progress." At that time, the efficiency of the mill was not up to that of mills in the United States but was approaching it. Operators still were not able to handle full work loads; 535 employees were being used for a mill that was estimated to require 350 ultimately.

The first piece of cloth was woven on September 29, 1949 (a historic date for the Island, since that represented the start of its textile weaving); but the plant actually was not considered to be in operation until about the first of 1950. In April, 1950, Textron Puerto Rico took over the plant from the Puerto Rican Development Co., which had started it.

One of the most interesting features of the Textron plant in Puerto Rico is its selection and training of employees.

At the end of 1950, over 9,000 persons had applied for work at the

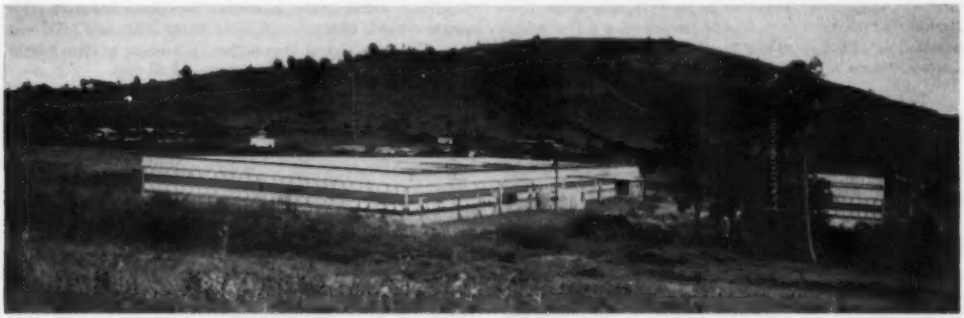
plant. The procedure used in selecting employees is as follows:

The employees to be considered have to be recommended by the local United States Employment Service, the Island Department of Labor, members of the Rotary Club or Lions Club, local schools, or some other well-known and respected organization. These recommended persons are then given a preliminary interview to be sure that they possess minimum qualification requirements (for example, a minimum of a sixth-grade education).

If the applicant has the necessary recommendation and possesses the minimum requirements, an application is made out. Employees for production jobs are then given a series of tests, including those to measure manual dexterity.

SUPERVISORS. If a person is being considered for a supervisory job, tests are also included to determine the applicant's I.Q., his proficiency with mathematics, and his personality. Clerical help is given a special test called the "white-collar test."

It is necessary for an applicant to obtain a grade of C+ before his application goes to the waiting files. After the applicant passes, references



BEACON TEXTILES, INC., occupies this 500,000 building located at Palmer, Puerto Rico, near Rio Grande. At the left is building No. 3; at the right, behind the palm tree, is building No. 1. No. 2, if built, will join No. 3 at the nearest corner and will extend toward building No. 1.

RESIDENT ENGINEER at the Beacon plant is Luis Nin, who holds a degree in engineering from Virginia Polytechnic Institute, a BS in chemistry from Notre Dame, and a Masters degree in chemistry from Columbia. He is examining the Sipp-warper stop motion.

STARTING UP the preparatory department at the Beacon plant was supervised by William J. Livsey, formerly of North Dartmouth, Mass. Here he is instructing Anguel Rodriguez, who is being trained as a warper-creeler hand.

Beacon Plant Uses Water On Roof to Cool Mill

► **Unit was originally designed for producing blankets but is now weaving rayon taffeta. Finishing-plant building may be equipped later. Structure designed to stand earthquake and hurricane stresses.**

THE PLANT OF BEACON TEXTILES, INC., at Palmer, Puerto Rico, near Rio Grande, was singled out last February 16 to be honored as the 100th new plant to be established in Puerto Rico since that island started a drive to bring in new industries in 1947.

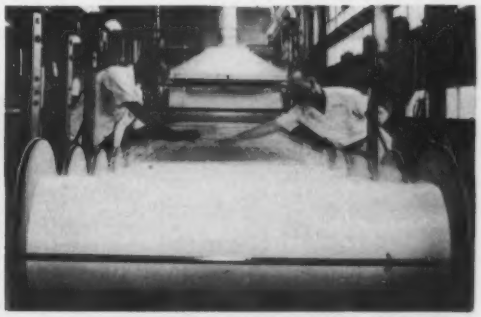
The Beacon Textile plant consists of 200 model C-44-in. looms weaving rayon-taffeta fabrics. These looms are served by a seven-cylinder Johnson

are checked. Before being hired, applicant is given a thorough physical test.

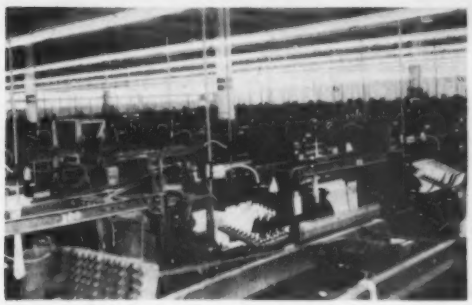
All employees when hired are told that they are on a temporary and probationary period of nine months. They are started out at the minimum rate of 30¢ per hr. and are given increases in pay as they advance. Every new employee is rated each week by his immediate supervisor in conjunction with someone from the personnel-relations department. All employees in the mill, new as well as old, are rated every two months; and the standing of each person is discussed with him at that time.

The company has a definite policy to replace all non-Puerto Ricans with Puerto Ricans as soon as possible. Initially, 25 persons were brought to Puerto Rico from the States to act as instructors and supervisors. The number fluctuated throughout the year, but it has gradually gone down. The average for the year 1950 was estimated as 15. By the turn of the year, all the first-line supervisors were natives of Puerto Rico; and one had achieved the title of assistant superintendent. Of the policy to have all jobs filled with Puerto Ricans, Vice President Flack says, "That policy extends to every job, including mine."

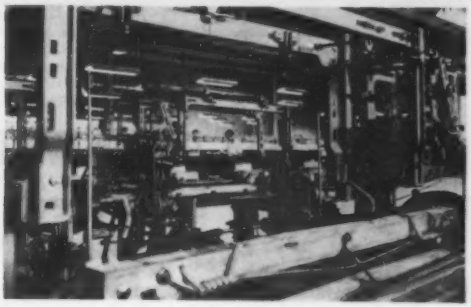
A PUERTO RICAN, Ismail Darnabe, had no previous experience before learning to weave at the Beacon plant. Note in the photograph the position of the loom switch to take advantage of overhead wiring.



PLANT SUPERINTENDENT John Shore (right) was formerly from Wollaston, Mass., and has been with Beacon Mfg. Co. 33 years. Shown with him in this view of the Beacon slasher is Lenocio Gutierrez.



THE BEACON WEAVE ROOM contains 200 model-C 44-in. looms, some of which are shown here. Note the continued rows of overhead lighting. The lighting is divided into four zones, and there is a separate switch for each half row.



LOOMS in the foreground are waiting to be put into production at the Beacon plant. Beyond them can be seen part of the 15 No.-90 Universal filling winders used to wind the 100-den. dull-rayon filling being used.

slasher, an 800-end Sipp warper, and 15 No.-90 Universal filling winders.

The plant originally was intended to manufacture blankets, but the management later decided to produce flat woven-rayon fabrics.

The equipment in the plant is all second-hand, but it is in excellent condition. With the exception of five persons brought from the States, it is being operated entirely with Puerto Rican help. The five brought from the States include John Shore, formerly from New Bedford and the Swannanoa, N. C., plant of Beacon Textiles, who is a superintendent; three loomfixers; and one preparatory man.

BUILDING. The main feature of the Beacon Textile plant is the construction of the building. The building was designed by Barker & Turoff, architects and engineers of Providence, R. I. They used as resident engineer a Puerto Rican who had been educated in the United States and who for a time was with the Puerto Rican Development Co. The local engineer is José Louis Nin, who obtained his B.S. in chemistry from Notre Dame, his Master's in chemistry at Columbia, a B.S. in civil engineering from VPI.

Three buildings were originally

planned. Building No. 1, intended for a boiler room and dye house, was built 93x133 ft. It has been used only as a store room and to house the boiler used to supply steam to the slasher. Building No. 2, planned to be 96x302 ft., has not been built. Building No. 3 is actually the main building. It is 475x127 ft. and has already been more than half filled with the equipment mentioned above. It is of single-story construction, with a steel frame and block wall. It utilizes steel sash and a reinforced-concrete floor.

The roof is made of slabs cast on the job, with a built-up roof over the slabs. On top of the built-up roof is a 4-in. layer of water, used for cooling the building. At the time operations were started, no other cooling was used. It was found that when the temperature in the shade was 98° outside, the temperature in the building under the water-covered roof was 85°.

Plans were to operate the plant with the windows open, as the relative humidity normally ranges from 65% to 85%.

The building was designed to withstand both hurricane and earthquake stresses. All footings are tied together with reinforced concrete beams.

WEAVE ROOM. The weave room measures 124x120 ft. It has an unusual lighting arrangement in that the fluorescent lights extend in a straight line from one side of the building to the other. They give the effect of a long, continuous fluorescent tube. The room, so far as lighting is concerned, is divided into four sections. A series of switches is provided for each section, so that every row of lights across the building has a switch for each half-section across the width.

Another unusual feature of the building is the living quarters for four of the Americans who work at the

Puerto Rican Rayon Mill Has All New Equipment

▶ **Problems in starting up were similar to those in the States. Additional unit is planned. Local help trained for jobs.**

THE PUERTO RICAN RAYON MILL at Vega Alta, 25 miles west of San Juan, compares favorably with the best in the United States. All of the equipment is new, and the 33,000-sq.ft. building was constructed especially for rayon weaving.

In November, 1949, the first four looms were put into operation; and by December, 1950, 154 had been running at between 83% and 84% efficiency, all with Puerto Rican labor with the exception of six employees. In February of this year, 84 more new Draper XD looms were added.

Arthur Contini, the local plant manager who had been running a plant for the parent company, Plaza Mills, in Manchester, N. H., stated that starting up the mill in Puerto Rico was the same as starting up a mill in the States. He was helped in starting up the mill by his daughter and son-in-law, Mr. and Mrs. D. Kulpa. Mrs. Kulpa taught the Puerto Rican employees to draw in warps and to weave. Her husband trained the slasher and filling-winding operators.

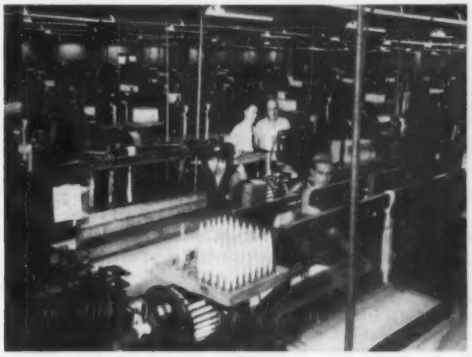
LOOMS ASSEMBLED. The looms as received were partially disassembled but were put together and started up under the direction of Mr. Contini. Early in the operation, two Puerto Rican graduates of the Fall River Textile School were employed. One, Louis Rodrigues, is now a foreman. Mr. Contini brought a few loomfixers from the States, and three have remained at the mill. The plant at the end of the year was operating with 93 employees and ran three shifts Monday through Friday and two shifts on Saturday. Total production has been between 68,000 and 69,000 yd. of cloth a week.

In addition to the 238 looms, the other new equipment in the mill consists of two Abbott filling winders, one Reiner warper with an 800-end creel, and one seven-can Cocker slasher.

The looms were started up on four-harness fabrics from 100- and 150-den. dull viscose rayon, but by the end of the year some looms were also operating on ten-shaft satins with 75- and 150-den. acetate warp yarn, and some nylon combination fabrics.

plant. For these men, individual rooms have been built in one corner of the plant. They have the use of a kitchen, a living room, and bath facilities. In all, there are provisions for nine persons to live at the mill. One room is reserved for the use of visiting executives. It is used by Richard E. Macdonald, president of the corporation, when he visits the mill and stays overnight.

THESE LOOMS originally were set up to train weavers, but it was later found better to train them on actual production machines, located beyond the wall in background. This view shows Edmund Harbour, formerly of Providence, R. I., *(left)*, and Angel Carrera, a weaver.



"STARTING A MILL in Puerto Rico is the same as starting a mill in the States," says Arthur Contini, manager of the Puerto Rican Rayon Mill (right) to C. W. Bendigo, then editor of TEXTILE WORLD. This view shows the first 154 looms put into operation.

THE ABBOTT FILLING WINDER used in the mill is shown running 150-den. yarn. The winder has the new standard boarding attachment, which is being supervised here by the mill's warper tender, Josefina Hernandez.

The plant is air-conditioned by York refrigerating equipment installed by the local York representative, Sucrs de Abarca. It maintains 84° temperature and 70% relative humidity. Local contractors for the building were Davila & Davila, Rio Piedras, Puerto Rico. The plans for the building were made by the Puerto Rican Development Co. in its own engineering department.

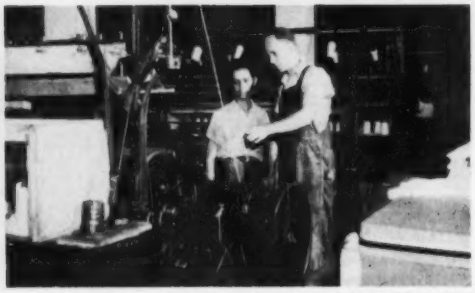
The building is located on an eight-acre site, and there are plans for a new building that will be approximately 147x100-ft.—or 14,700 sq. ft. This new building will be used to house the preparatory equipment, and the old building will be used for more looms.

"IN ONE YEAR a Puerto Rican fixer, properly trained, is capable of running a section," says Arthur Contini. Shown here is Herminio Villarrubia, one of the men trained to fix looms.

A DENTING MACHINE is used to speed up the drawing-in operation at the mill and is indicative of the modern equipment being used. It is being operated here by Maris P. Guzman, an employee of less than a year.

ONE OF THE FEW EXPERIENCED MEN in the mill, Steve Kulpa, shows how to put up an end on the slasher. The helper he is instructing is Felipe Figueroa, another of the local employees making good in his new work.

A FORMER TOBACCO WAREHOUSE has been adapted to house Señorita Hosiery Mills. Among those in front of the building is Augustin Echvarria, of the Economic Development Administration of Puerto Rico.



SEÑORITA HOSIERY MILLS started operations with the eight full-fashioned machines shown here. Israel Crawford, superintendent, is pictured here with one of the knitters, Matilde Gonzales, a local man.

Senorita Hosiery Mills Knits 15-Den. 51-Gage Nylons

► **Former tobacco warehouse houses ten full-fashioned machines. Three experienced operators started up mill.**

SENORITA HOSIERY MILLS, INC., at Gurabo, Puerto Rico, is an example of a type of operation for which the island is well suited. The hosiery mill was started up in September, 1949, as a subsidiary of Claussner Hosiery Co., Paducah, Ky.

The initial installation called for eight machines: four 45-gage Reiner and four 51-gage H.S.I. German machines. However, before the end of the year, two new 51-gage Kalio machines were added.

The plant was started up and is being operated by Israel Crawford from Paducah, Ky. To assist him he has Leroy Borden, also of Paducah; formerly he also had Mrs. Crawford, who trained the loopers and seamers in the mill before she gave up her job. The plant has three looping machines and 15 seaming machines.

The hosiery mill was located in a former tobacco warehouse that was quite well suited for the purpose. A portion of the warehouse, actually less than one-quarter of it, was walled off and air-conditioned to house the knitting machines.

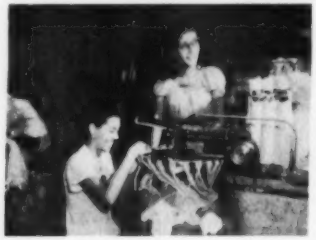
70 EMPLOYEES. At the turn of the year, the plant was employing 70 persons, of which 24 were knitters (8 on each shift). A native Puerto Rican, the only other experienced man in the plant, was obtained from a full-fashioned knitting mill in San Juan and was developed into a combination instructor and foreman.

Superintendent Crawford stated that he was quite well pleased with the employees in the plant, with a high percentage of them ambitious and anxious to learn. Unfortunately, however, some of them had had the desire to learn in order to go to the States to work. His greatest loss was to the Army; six of his best knitters had been drafted during the year.

Training the employees was a little difficult, since none of them were used to any type of skilled mechanical work and did not readily understand the delicacy of knitting 15-den., 51-gage full-fashioned hosiery. However, after the end of one year's operation, efficiency and percent of first quality were considered to be about as good as could be reasonably expected for a new mill.

The mill has a novel arrangement for rotating shifts. The first and second shifts rotate every two weeks, but the third shift changes only once in three months. This actually means that a group of employees work on a third shift three months out of nine. Only the knitting operates three shifts.

The air-conditioning equipment used is a Westinghouse package unit.



THIS PUERTO RICAN looping operator is Herminina Arvaro. At her side is Yin Madera. Miss Madera was the first woman hired at the plant and is now the forelady of the looping and seaming department.

SEAMING OPERATOR Marcolita Gonzales is the sister of one of the knitters who came to work with the eight original knitting machines. Management has found there is often more than one good worker in a family.

THE MENDING MACHINE shown here in use by Trinidad Ramiez was developed by the parent organization, Claussner Hosiery Co. It is called the Marvel mending machine and is used to work out pulled threads (snags).

Typical Ends-Down Check

	Number of ends down per cycle				Ends down per 1,000 spindle hr.				
	Filling		Warp		Filling		Warp		Total
Type Draft	Conventional Draft	Long Draft	Long Draft	Long Draft	Conventional Draft	Long Draft	Long Draft	Long Draft	All Mill
Spindles	20,692	11,712	6,048	27,408	20,692	11,712	6,048	27,408	65,860
Yarns	39s-41s	39s	21s	31s	39s-41s	39s	21s	31s	
Monday	171	100	60	301	41	43	50	55	48
Tuesday	186	91	51	290	45	39	42	53	47
Wednesday	198	83	57	281	48	35	47	51	47
Thursday	207	97	48	299	50	41	40	55	49
Friday	177	102	62	307	43	44	51	56	49
Total	939	473	273	1,478	45	40	46	54	48

The number of ends down was found in a one-cycle check. In this plant, each spinner makes five cycles per hour. The ends down per 1,000 spindle hr. is the result of multiplying the ends down per cycle by five and 1,000, and dividing by the total number of spindles checked.

Here's an Easy Way to Check SPINNING ENDS DOWN

The method of checking spinning-ends down outlined here will serve as a good barometer for watching running conditions in your spinning room.

- ***No specially trained personnel are needed—the overseer can do the job.***
- ***Although this method is not mathematically exact, it will get results.***
- ***The method is simple and does not require any complicated calculations.***

By P. S. LEACH

Industrial Engineer, Consolidated Textile Co., Inc.

ENDS-DOWN CHECKS in spinning rooms are made so that the overseer and superintendent know how the department is running. Actual figures mean nothing by themselves; they serve only to give an indication of running conditions.

The method probably in greatest use is to have a timestudy person tally the ends down and classify the causes on one set of sides for a 4- or 8-hr. period. He then calculates the ends down per thousand spindle hours from the results of his tally.

A 4-hr. check of this type requires about 5 hr. of preparation, checking, and calculating. In addition, this method is inadequate from a statistical standpoint. For example, if you check one set of sides, about 1,500 spindles, in a 60,000-spindle mill, you have checked only 2.5% of the spindles.

Classifying the causes of ends down in connection with an ends-down check is of little value, because the large majority of causes cannot be classified. The best way to determine causes of ends down is to make special tests.

Here's the Method

The method developed here is based on the idea that you want to have comparative figures, which will enable you to know how the spinning department is running.

It is true that the only method which would give completely accurate results would be to count every end that came down. Of course, this procedure would be highly impractical, if not impossible.

So, to do the next best thing, let's check each side once a day to get the number of ends down during one spinner's cycle. You know, from the work loads, the number of cycles each spinner makes during 1 hr.

Then, by simple calculations, you can determine the approximate number of ends down per thousand spindle hours.

Let's use an example to see just how to make the calculations. In the table at the head of this article, you will notice that on Wednesday the check showed 198 ends down on conventional-draft filling. The total number of conventional-draft spinning spindles is 20,692.

To find the ends down per thousand spindles, you have to know the number of cycles per hour. In this case, the spinner makes five cycles per hour. The ends down per hour would be 198×5, which is 990.

The ends down per thousand spindle hours can be found by proportion. If 990 ends are down per hour on 20,692 spindles, then the number of ends down per 1,000 spindles in one hour would be $\frac{1,000}{20,692} \times 990$, which is 47.8, or 48.

The main advantages of this method are that it requires no special personnel, it is simple and quick, and is very flexible. The tallies can be used to give comparative ends down according to yarn numbers, roving numbers, types of yarns, types of drafting systems, sections, etc.

Although they are not shown in the table, time of day and atmospheric conditions when the checks are made should be recorded; because the ends down may vary if either one is changed.

THIS BALE OF FINISHED FABRIC has been dyed and finished in a continuous operation at the new Gregg Dyeing and Finishing Plant of Graniteville Co. Some new machines have been built and standard machines have been modified to permit continuous processing of cloth through the plant.

New Dyeing and Finishing Plant

Gregg Dyeing & Finishing Plant of Graniteville Co. is an excellent example of the results you can expect from good planning and sound engineering. Among the outstanding features of this plant are—

- ***Single-story construction on three levels***
- ***Continuous processing throughout***
- ***Efficient exhaust and ventilating system***
- ***Hot waste that heats fresh water***

By E. DALTON WHITE
McGraw-Hill Atlanta Bureau

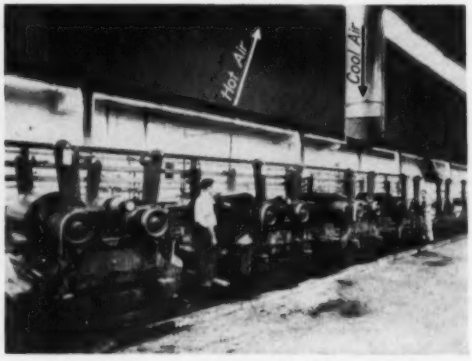
Completion of the new $10,000,000 Gregg Dyeing and Finishing Plant at Graniteville, S. C., marks a milestone for the Graniteville Co. in its 104 years of continuous operation and completes its program for fully integrated operations.

The plant itself, with its equipment and operating facilities, is one of the most modern in the industry. It was named after William Gregg, who founded Graniteville Co. in 1845. Design, layout, and installation of machinery and equipment were done by the company's own staff. Daniel Construction Co., Greenville, S. C., was the contractor and builder.

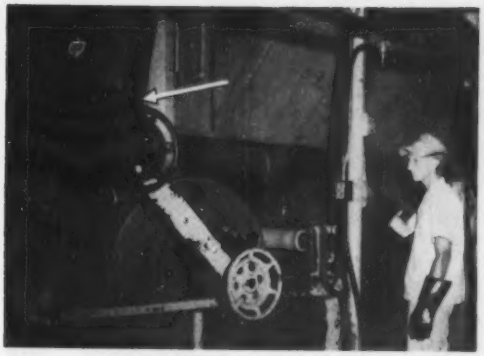
INNOVATIONS ABOUND in the modern brick, steel, concrete, and tile Gregg Dyeing & Finishing plant of Graniteville Co. The company has designed and built a number of special machines and considerable equipment to its own specifications. This does not mean that Gregg is without standard equipment. However, such equipment has been installed and arranged, with some additions, to provide special facilities.

The plant is laid out for straight-line production with a minimum of materials handling and backtracking. Cloth enters the building at the south end by rail and truck, and the finished

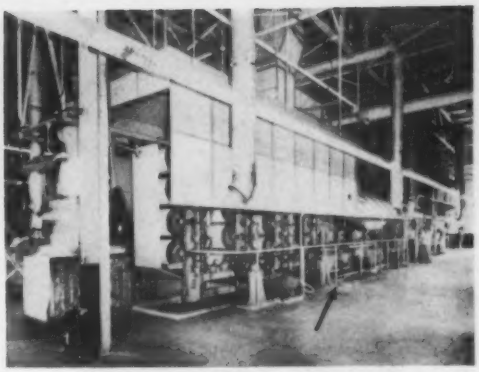
THE CHEMICAL-MIXING ROOM is on the mezzanine to permit gravity flow to all machines. The valve system will permit shifting of supply tanks to serve any equipment.



THE EXHAUST COVER over this battery of dye jigs takes away vapors and heat. Cool air enters the working areas through ducts as shown here.



THE BOIL-OFF MACHINE has a pushbutton hoist electrically operated from a nearby post which reverses the empty roll for filling in the next stage bath.



SAFETY GUARDS around all drives and gears are insurance against accidents. This desizing range, as well as all other machines in the plant, also has an exhaust hood and ventilating ducts.

Features MODERN ENGINEERING

product leaves the building at the north end.

Standard equipment has been set up in series to form continuous ranges, instead of being laid out for batch processing. For example, in the application of certain special finishes, a range has been developed consisting of padder, hot tenter, curing oven, neutralizing boxes, and dry cans.

There are three continuous bleaching ranges and two open kiers or boil-off ranges. Complete mercerizing equipment; several continuous dye ranges, together with a battery of jigs; several Sanforized-shrinking ranges, together with necessary calenders, padders, tenter frames, and mangles, are arranged to handle a wide variety of fabrics and finishes.

Air System Provides Good Ventilation

An outstanding feature of the new plant is the ventilating air system to provide the most comfortable working conditions. Air is drawn in from the roof and is blown through ducts to all parts of the plant. Ducts are located at working areas around each machine, so that the operator works in the cooled area.

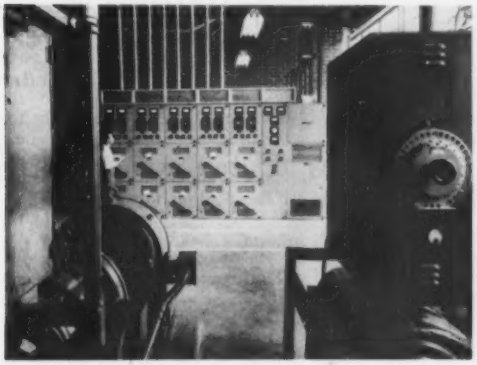
The exhaust system, with hoods over all machines, carries away all fumes, heat, and steam vapors from the points of origin and exhausts them through roof ventilators.

The exhaust system includes roof fans to remove heat fumes collected at or near ceiling.

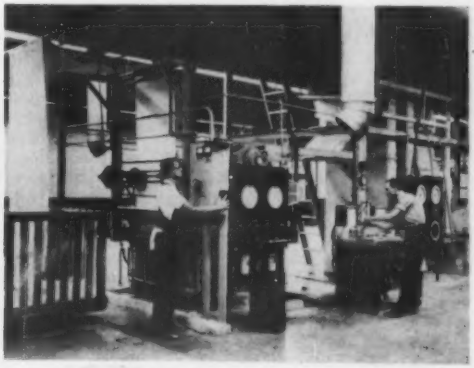
The roof itself is of pre-cast concrete slabs insulated on top with 3-in. cork insulation, and it is covered with built-up tar and gravel.

As a means of preventing condensate on the underside of the roof, the air system circulates warm air over the area. An arrangement of steam pipes in the air-intake system on the roof will heat the incoming air in cold

(Continued on page 290)



THE ELECTRICAL CONTROL ROOM is very compact. Purchased ac. electricity is converted to dc. for plant use because it gives better speed control.



QUALITY IS CONTROLLED at strategic points throughout the plant. Speeds for individual units and ranges are synchronized and can be accurately controlled.

FIXER AND KNITTER work together to earn a bonus. Fixer gets half as much bonus as both of his two knitters.

TRANSFERS accounted for a high percentage of the bad work made. Now knitters make transfers more carefully.

EARNED-BONUS PLAN
Pays in Knitting Mill

- *Extra-pay incentive increases production at Lawler Hosiery Mills*
- *First-quality work rose from 87% to a steady 95%*
- *Bonus is graduated according to production and quality*

By **E. DALTON WHITE,** McGraw-Hill Atlanta Bureau

BONUS PAYMENTS are proving highly successful as incentives for production and quality at Lawler Hosiery Mills, Carrollton, Ga. Three years ago quality was down to around 87%. Now it is better than 95%.

More than 35% of the loopers, 20% of the string knitters, and 30% of the transfer operators receive regular bonus payments. Employees in other departments share in the bonus payments in about the same numbers.

Production rates for 100% machine efficiency are set for each department. Bonus payments are then graduated from 100% to a minimum percentage. A worker receives no bonus pay for production below the minimum.

This minimum percentage roughly corresponds with what was about average production three years ago when the extra incentive plan was begun. For stripe knitting, it is 87%. For plain knitting, it is 89%.

Quality is also tied to the bonus plan. At Lawler, up to about 2% defects is considered normal in knitting. If a knitter holds her defects to less than 2% of her total production, she receives maximum bonus pay for her weekly production. If defects rise above 2%, her bonus-pay rate drops.

Above 4% defects is considered excessive. If a knitter's defects rise to that figure, she receives no bonus pay, regardless of her production percentage. If defects rise above 5%, she is penalized.

BONUS FOR FIXERS. Machine fixers share in bonus payments. Lawler uses a fixer for every two knitters; the bonus for the fixer is equal to one-half the amount earned by both of the two knitters. For example, if each of the two knitters receives a bonus for the week of $5, the fixer's bonus would be $5. If one knitter receives a $5 bonus and the other one a $4 bonus, the fixer's bonus would be $4.50.

However, fixers are not penalized if the knitter goes over the maximum allowable percentage of bad work.

The bonus system has brought about closer cooperation between knitters and fixers. Fixers point out to knitters why a machine gets out of adjustment, and knitters are careful to flag machines for needed adjustments.

Another aid to the knitter in pro-

Knitting Production Standards

Automatic, ⅝ length
Speed: 200 rpm.
Yarn: Leg, 30/2
Heel and toe, 24/2

Size	Total links	Doz. pairs per 8 hr.
6	49	6.802
6½	50	6.666
7	54	6.169
7½	55	6.060
8	59	5.649
8½	60	5.556
9	62	5.376
9½	63	5.289

Automatic, ⅝ length
Speed: 240 rpm.
Yarn: 36/2

Size	Total links	Doz. pairs per 8 hr.
6	51	7.840
6½	52	7.689
7	59	6.776
7½	60	6.666
8	66	6.060
8½	67	5.969
9	71	5.632
9½	72	5.555

Sewed anklets
Speed: 280 rpm.
Yarn: 36/2

Size	Total links	Doz. pairs per 8 hr.
6	43	10.848
6½	44	10.605
7	47	9.928
7½	48	9.721
8	54	8.642
8½	55	8.483

Automatic, anklets
Yarn: 40/2

Size	Total links	Doz. pairs per 8 hr.
6	41	9.752
6½	42	9.520
7	45	8.888
7½	46	8.688
8	52	7.689
8½	53	7.546

Automatic, half-hose
Yarn: 40/2

Size	Total links	Doz. pairs per 8 hr.
6	44	9.088
6½	45	8.888
7	51	7.840
8	58	6.898
8½	59	6.776
9	61	6.556
9½	62	6.448

ducing quality work is the tagging of menders for possible causes. If seconds are above normal, or if the same defect shows up repeatedly, the seconds are returned to the knitter for examination. The defects are discussed with the fixer, and the cause of the bad work is traced and promptly corrected.

OTHER DEPARTMENTS. Employees in other departments share in bonus payments on a basis applicable to their type of work. Loopers do not receive a bonus if the number of menders is over 1%. If they are under 1%, the looper gets a bonus equal to one-half her regular earnings in excess of base production. For example, if she earns $4 over base production for the week and has less than 1% bad work, she receives a bonus of $2.

Top cutters who fail to reject bad tops are docked ½¢ for each bad top found by the knitter before the top is placed on the machine. If the knitter does not notice the defect and it is processed and reaches the inspector, the top cutter is docked 1¢ for each defect.

The reason for this sliding penalty scale is that the top cutter has caused extra work for the knitter and has also allowed more waste to be made.

As in the case of loopers, top cutters receive a bonus equal to one-half their earnings above base production. Penalties for allowing bad work to be processed are deducted from the total pay.

Seamers in the sewing department receive a bonus of $2 for 100% performance. Penalty for bad work is 10¢ per doz.

Turners receive a bonus equal to one-half the amount earned over base production.

Bonus-Pay Schedule

Production	Stripe Knitting Bad Work (%)			Production	Plain Knitting Bad Work (%)		
(%)	0 to 1.99	2 to 2.99	3 to 3.99	(%)	0 to 1.99	2 to 2.99	3 to 3.99
98	$7.50	$6.00	$4.00	98	$6.00	$4.50	$3.50
97	7.00	5.00	3.50	97	5.00	4.00	3.00
96	6.00	4.50	3.00	96	4.00	3.50	2.50
95	5.00	4.00	3.00	95	3.50	3.00	2.50
94	4.00	3.50	2.50	94	3.00	2.50	2.00
93	3.50	3.00	2.50	93	2.50	2.00	1.50
92	3.00	2.50	2.00	92	2.00	1.50	1.00
91	2.50	2.00	1.50	91	1.50	1.00	.50
90	2.00	1.50	1.00	90	1.00	.50	
89	1.50	1.00	.50	89	.50		
88	1.00	.50					
87	.50						

If bad work averages 4%, no bonus is paid. If bad work averages over 5%, knitter is penalized.

Bad-Work Penalties

String knitters

Bad work (%)	Pay deduction
Less than 5.00	None
5.00 to 5.99	7¢ (per doz.)
6.00 to 6.99	10

Transfer knitters

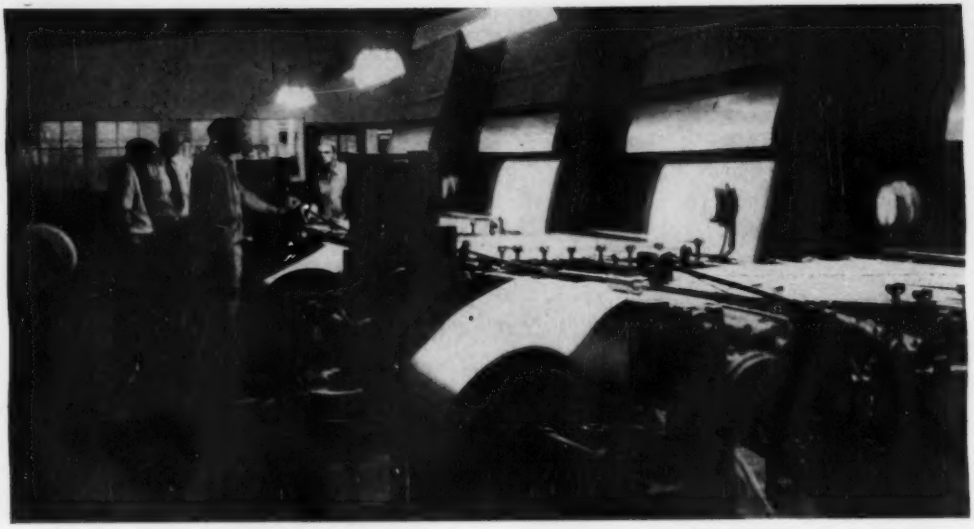
Bad work (%)	Pay deduction
Less than 2.00	None
2 to 2.99	25¢
3 to 3.99	30
4 to 4.99	40
5 and over	50

Loopers

Bad work (%)	Pay deduction
Less than 0.50	None
0.50 to 1.00	15¢
1.00 to 1.50	20
1.50 to 2.00	25

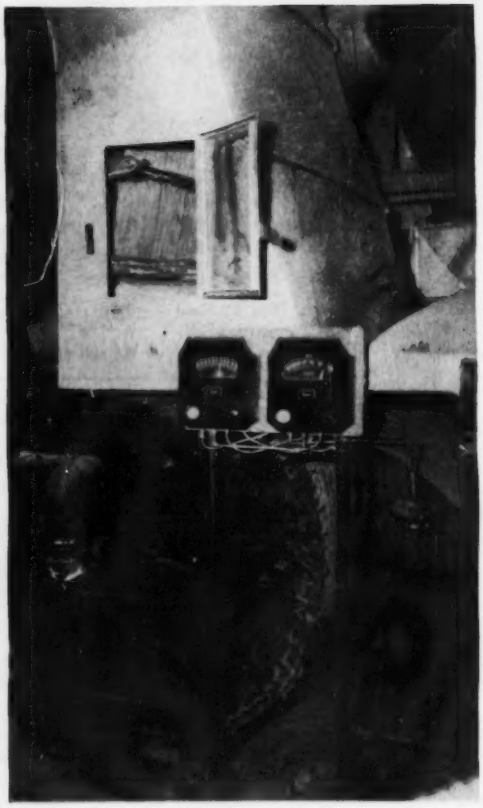
Top cutters

Turned in by knitter ½¢ each
Turned in by inspector 1¢ each

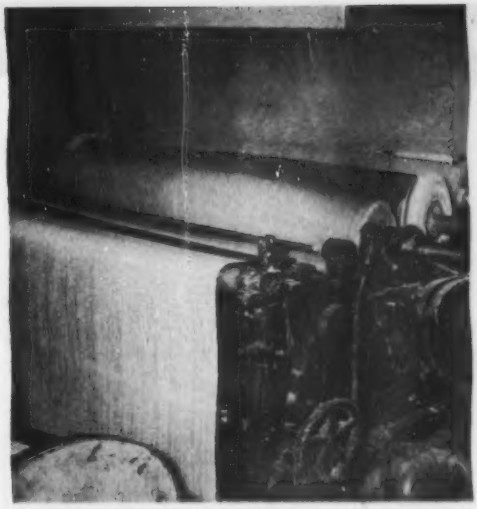


NEW SLASHERS are well lighted at the front to aid yarn inspection.

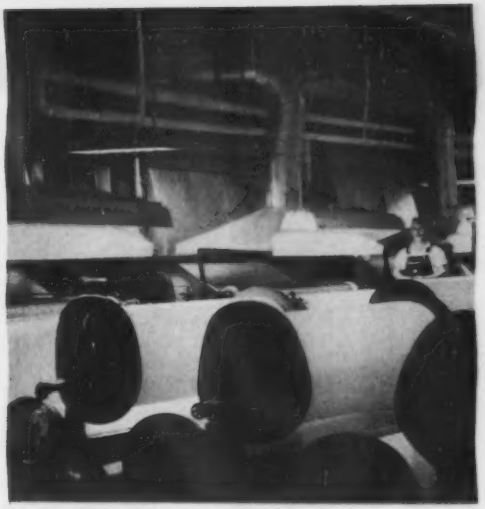
BEAMS are stored by overhead hoist on a four-tier rack at the back of the room.



YARN ON THE CYLINDERS can be inspected through this door cut in the exhaust hood.



TINT FOR IDENTIFICATION is given a few warp ends at one end of beam. Vat, not shown, is between size box and cylinder.



SIZE BOXES are covered by exhaust hoods and lighted by low-hanging fluorescent lights.

Spartan Mills Modernizes Its SLASHER ROOM

HIGHLIGHTS: *New slashers feature easy and accurate operation—Equipment includes automatic controls, variable-speed drives, good lighting, and mechanical beam handling.*

By E. DALTON WHITE
Atlanta McGraw-Hill Bureau

A FEW MONTHS AGO, Spartan Mills, Spartanburg, S. C., reworked its slasher room. Now it has one of the most modern slasher rooms in the country.

The mill operates four three-cylinder slashers on warps for broadcloth, piqué, pillow tubing, and sateen.

The beam rack on each slasher has stop-start button switches on each side. Thirteen beams can be mounted in the slasher creel to produce loom beams on 31s yarn with 1,728 to 4,484 ends. In the rear of the slasher room, steel storage racks have been erected for storing empty and full beams. Beam handling is by an overhead trolley hoist.

The slashers are fitted with variable-speed drives. Power for the multi-motor drive is supplied from a four-unit motor-generator set. The set consists of a type CS driving motor, a 230-v. variable-voltage d.c. generator, a 230-v. constant-voltage exciter, and a rotating regulator. The over-all speed of the slasher drive is controlled by the voltage from the variable-voltage regulator.

STEAM TRAP. To increase production and save steam, Spartan Mills installed a Sarco steam valve in the by-pass line around the temperature-control valve. The valve traps the condensate from the slasher cylinder when the temperature of the cylinder reaches the required setting and the temperature valve is closed.

Spartan uses 16-oz. wool blankets on the back squeeze rolls. A change is made every four weeks. The 6-yd. blanket is first broken in on the bottom roll and later switched to the top roll.

Synthetic roll covers are used on the front squeeze rolls. These rolls are buffed every two years.

Size formulas generally follow the size manufacturer's recommendations, but the mill is now experimenting with its own formulas to meet specific requirements. Good results have been obtained so far, and further tests continue to be made.

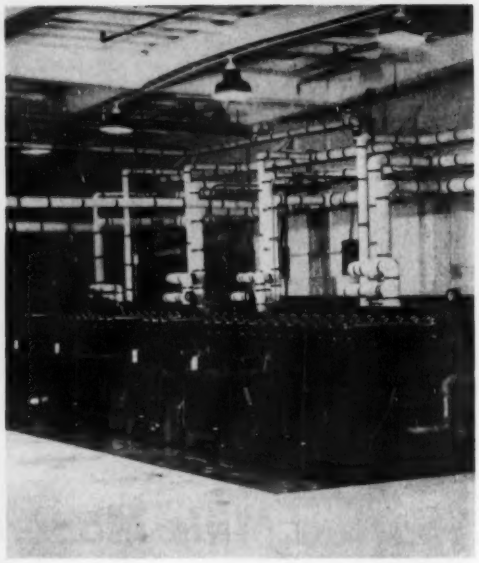
Size is cooked in 245-gal. batches for 1¼ hr. at 210° F. Then water is added to bring the total batch to 258 gal. before the batch is transferred to a 300-gal. storage tank. Storage is in a closed-coil tank at 208° F.

Mill requirements are eleven to twelve batches a day. Each batch is carefully weighed and tested to insure uniformity.

As a means of identifying loom beams for particular cloth constructions, the mill tints a few strands on one end of the beam. Tint is applied to the yarn as it passes through a small tint vat just before the yarn goes onto the first slasher cylinder.

As a check on uniform tension, every third loom beam is inspected for ends out.

200 LB. OF RAYON CAKES can be dyed in 4 hr. in this machine at a labor cost of ½¢ and a machine-investment cost of 1¢ per lb. of yarn.



200 LB. OF SKEINS can be dyed in about 48 min. in these machines at a labor cost of ½¢ and a machine-investment cost of ½¢ per lb. of yarn.

Dye RAYON CAKES— And Save Money

▶ *A mill can save about 11⅔¢ per lb. of yarn by cake dyeing instead of skein dyeing. Cost of yarn and winding are the big factors.*

By L. L. WALMSLEY
American Viscose Corp.

CONSIDERABLE SAVINGS can be made by dyeing rayon in cake form rather than in skeins. Advantages are also gained in quality; minimum handling of the yarn lessens the number of broken ends and filaments.

Ever since viscose rayon was produced in cake form, there has been a gradual trend towards utilizing this package in the various wet-processing steps encountered in dyeing and soaking. In the last few years, a further impetus has been added to this trend by the increased cost of winding skeins.

Today cake-dyeing machinery is available which makes possible the satisfactory direct dyeing of 600-, 300-, and 150-den. 1.1-lb. viscose cakes. The larger the cakes by weight and the finer the denier per filament, the greater the difficulty of dyeing.

A factor that requires consideration is the relatively large amount of capital required to dye in cake form on a very small scale. The average commission skein dryer seldom buys yarn and will find it no more profitable to dye cakes than skeins. The possible gain by the commission dyer will be the offer of this additional service to his customers and knowledge of the process that may eventually replace skein dyeing to a major extent.

Until more information is available and until cake dyeing is much more general in this country than it is at present, it will not be possible to give exact figures on comparative costs of the two dyeing methods. Therefore, some of the figures given here are approximations. However, the conclusions drawn are based on data already available and are reasonably accurate.

LABOR COSTS. Let us say that a

. cake dyeing is less expensive

EXTRACTING AND DRYING cakes takes about 8 hr., against 2 hr. for skeins, and increases cake-processing costs ⅔¢ per lb. over skein-processing costs.

Cake Dyeing vs. Skein Dyeing

	Cake (¢ per lb.)	Skein (¢ per lb.)
DYEING COST		
Labor	2 1/2	1/2
Capital	1	1/3
OVER-ALL DIFFERENTIAL		
Dyeing		
Labor	2	
Capital	2/3	
Drying	2/3	
Total	3 1/3	
Other		
Yarn package		5
Winding		10
Total		15
RESULT		
Net saving: 15 — 3 1/3¢ = 11 2/3¢ per lb. of yarn in favor of cake dyeing		

20-arm skein-dyeing machine will dye 200 lb. of skeins. It will actually dye 250 to 270 lb., but this figure is rather unwieldy and it is easier to calculate on 200-lb. batches.

A 20-arm machine is capable of turning out ten batches per day provided that the shade is standard and requires no additions. Of course, ten lots per day is by no means regular production. This figure has been used because of simplicity in calculation.

Ten 200-lb. batches per 8-hr. day gives 2,000 lb. of skein-dyed yarn.

One cake-dyeing machine of 200-lb. capacity can dye two lots in 8 hr. Thus, the capacity of one cake-dyeing machine is 400 lb. per 8-hr. day.

Considering one man for each machine at $10-per-day labor costs, we find that the cost per pound of cakes is 2½¢ and the cost per pound of skeins is ½¢. Obviously, the labor saving in dyeing by skeins is 2¢ per lb.

The cost of chemicals and dyes will be approximately the same. The steam cost in the dyeing operation is approximately the same for both; and while the cakes take much longer to dye, they are in an inclosed machine and there is no dissipation of steam as there is in skein dyeing.

The drying of skeins takes approximately 2 hr., while the drying of cakes takes approximately 8 hr. It is estimated that the approximate saving in favor of skeins is ⅔¢ per lb.

MACHINE COSTS. Considering the capital costs of these two types of dyeing, we find that one 20-arm skein-dyeing machine will cost about $19,000 and one 200-lb. cake-dyeing machine will cost about $10,000. For a dyeing capacity of 2,000 lb. of yarn a day, the machine cost for skeins would be $19,000 and for cakes it would be $50,000 (since it would be necessary to have five cake-dyeing machines to dye the same amount of yarn as one skein-dyeing machine will handle).

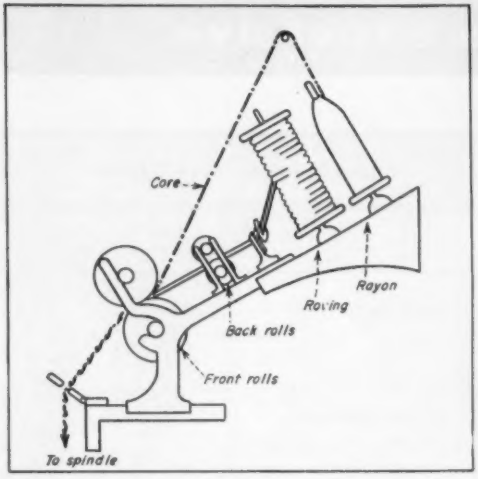
The capital cost per pound of yarn on skeins, estimating 5% interest charge and 5% depreciation, is ⅓¢. On the same basis, the capital cost per pound of yarn on cakes is 1¢. The difference in favor of skeins is ⅔¢.

Considering labor costs, chemicals, dyes, steam, drying, and capital costs, we see that the total saving in skein dyeing over cake dyeing is 3⅓¢ per lb. of yarn.

But those costs are not the whole picture.

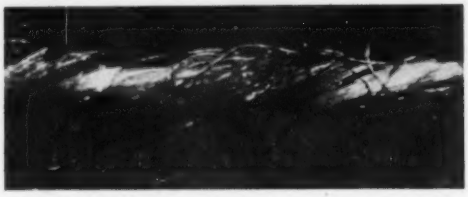
Cakes from the rayon producer are 5¢ per lb. cheaper than skeins. In addition, the winding of the yarn from skeins to spools, which is a normal operation, costs roughly 10¢ per lb. These two savings total 15¢ per lb. of yarn. The net saving in dyeing cakes instead of skeins is therefore 11⅔¢ per lb. (15¢ −3⅓¢).

There is every reason to believe that with improvement in technique and machinery, the future cost for cake dyeing, as far as dyeing cost per pound of yarn is concerned, will be less than it is at present. It was only a relatively short time ago that the time necessary to dye skeins was in excess of 2 hr., whereas today the dyeing time is seldom more than 20 min.



CORE SPINNING is done by running a small, strong yarn through the frontroll with the yarn being spun, and twisting them together.

A. STANDARD TWO-PLY YARN composed of a nylon (light yarn) and a wool yarn shows the two yarns distinctly.



B. CORE YARN made from the same nylon and wool yarns is rounder and fuller, with the wool almost concealing the nylon core.

For Cheaper Plied Yarns — Try CORE SPINNING

- *Old "Belgian doubling" system is fast and economical*
- *Newer yarns and fibers broaden possibilities*
- *Nylon core with wool covering makes good combination*

By A. JOHNSON

CORE SPINNING, sometimes called "Belgian doubling," is a very old textile process; but if attention could be paid to certain mechanical considerations, core spinning could be revived today with advantages in production and yarn and fabric variety.

In core spinning, a strong, fine yarn is led into a heavier, weaker yarn while the latter is being spun in the normal way on a spinning frame. As shown in the accompanying diagrammatic sketch, the core yarn by-passes all the spinning rolls except the front roll. The core yarn and the spun yarn are held by the nip of the front rolls and are twisted together as they proceed toward the spinning bobbin.

This process, as formerly used, had three objects in view: (1) the support of a weak thread during spinning and weaving; (2) the making of a strong and unobtrusive foundation in the woven fabric; and (3) the elimination of the twisting or plying operation.

The two accompanying photographs give some idea of the difference in appearance of a two-ply yarn made in the normal manner and a two-ply yarn made on the Belgian-doubling or core principle.

CORE YARNS. Yarn A illustrates an end of 70s worsted yarn with 21-tpi. Z twist plied with an end of 30-den. nylon with ¾-tpi. S twist, plied with 18 turns of S twist. Yarn B shows the effect obtained when the 30-den. nylon is led into the 70s worsted yarn while the latter is being spun.

As can be seen in the photographs, yarn B is rounder and fuller. The increased fullness is a property that carries over through subsequent processing and gives character to the finished fabric.

The possible variations are almost unlimited. For example, a 2/48 worsted yarn could be imitated by leading a cotton core, say 60s, into a 34s worsted yarn. The resultant worsted count would be approximately 24s.

It is evident that, by producing one thread of 34s worsted rather than two threads of 48s worsted, spinning production is increased by about 40%.

The number and types of core threads available have increased considerably; and instead of 60s (a medium count in cotton), we can draw on the synthetics in much finer counts.

Suppose, for example, we use a 20-den. high-tenacity rayon for the core of a yarn equivalent to 2/48 worsted yarn. By calculation we find that we should need to lead a 20-den. core into a 25s worsted yarn—an increase in production of approximately 90%. In practice, this figure would be considerably modified by factors such as increased doffing time, but it nevertheless represents a worth-while increase in spinning output. Furthermore, the twisting operation has been eliminated.

GRADE OF WOOL. In trials along these lines, the writer, in collaboration with Mr. Hardaker, Courtaulds Ltd.,

Fabric Test Results

		Standard yarn*	Core yarn No. 1‡ (20-den. nylon core, 12 tpi. Z)	Core yarn No. 2‡ (20-den. nylon core, 9 tpi. Z)	Core yarn No. 3‡ (20-den. nylon core, 6 tpi. Z)
Tensile strength (lb.)	warp	88	108	95	73
	filling	84	66	65	57
Seaming qualities (lb.)	warp	59	39	33	32
	filling	48	53	49	45
Resistance to abrasion	warp	20,000	17,000	9,000	10,000
	filling	20,000	10,000	6,000	7,000
Resistance to creasing (degrees) (Angle of recovery)	warp	143	145	145	140
	filling	143	150	155	150

* The standard yarn was made by plying two single 24s worsted yarns (9 tpi. Z twist) with 9 tpi. S twist.

‡ All three core yarns were the equivalent of 12s worsted.

Westcroft Mills, Bradford, England, revealed a further benefit that should be exploited in the future. This benefit concerns the grade of wool necessary to produce worsted yarn of fine counts.

It is well known that the quality number of a wool is a rough indication of the fineness of the worsted counts to which it will spin. By leading in a core thread during spinning from 64s quality top, the fineness of the counts spun can be made to exceed the quality number.

For example, 100s worsted can be spun with ease from a 64s quality top. Similarly, 60s worsted yarn was spun from 56s quality wool; 100s worsted was spun from a mixture of 50% 4½-den., 6-in. staple viscose and 50% 64s wool; and 60s worsted was spun from a mixture of 50% 4½-den., 6-in. staple acetate and 50% 64s wool.

These yarns were examined very carefully, and it was found that the fibers surrounding the core tended to hide the latter and thereby cloak its properties.

The foregoing advantages of finer yarns are offset to some extent by the care that must be taken in their manipulation during the spinning process. For example, on an ordinary spinning frame, it is difficult to know whether nylon used for a core is still running alongside a much thicker yarn that is being spun. The majority of the stop motions that could be applied were not delicate enough to operate with a fine yarn. Better control could be obtained if a stop motion more suitable for fine deniers were designed.

CORE-YARN FABRICS. In order to examine the appearance of fabrics made from core yarns and investigate their properties, a small series of fabrics were made according to the particulars given in the accompanying table. The wool component of the core yarns was arranged in spinning so that the resultant count of the combined thread was 12s worsted count. The yarn was woven into 2x2 twill fabrics with 48 warp ends and 44 filling picks per inch, 36 in. in the reed. The cloths were given the normal piece-dye finish and tentered to 29-in. width. A standard fabric was made for purposes of comparison with the core-yarn fabrics.

The influence of twist on the strength of the cloth was quite evident. The most highly twisted yarn of the group gave the greatest strength to the fabric.

Seaming properties were low in comparison with the all-wool standard, but again the progression coincides with the increase in twist.

The highest twist also gave the fabric the highest resistance to wear, although none of the cloths in the core group approach the durability of the all-wool standard.

It is evident that the chief advantage in using a core yarn will be increased production.

These tests do not discount the utility of a core yarn, but they indicate that this method of yarn construction should be used with discretion. It seems certain that core yarns could be constructed to equal, if not to excel, the all-wool standard in the tests tabulated.

THIS CORE-YARN FABRIC was made of warp and filling yarns composed of a cotton core covered by viscose rayon..

APPEARANCE. In appearance, the core-yarn cloths differed slightly from the more orthodox twill structures, but this fact should be an advantage in adding variety to cloth design.

While the use of high-tenacity fine-denier rayon opens out tremendous possibilities in yarn and fabric development, the older yarns should not be overlooked in choosing core yarns for certain purposes. It is interesting to record details of a fabric made with a cotton core which had a very good reception because of its hand, appearance, and performance under test conditions.

The yarn in question was made by leading a core of 40s cotton into an 8s cotton-count viscose-rayon roving. The rayon was 1½-den., 1⅞-in. bright. The plied yarn was approximately 7s cotton count. This core yarn was woven across a warp of 2/40 worsted-count, 3-den., 4-in. viscose staple, 48 ends per in., 2x2 twill, 50 ppi. The cloth was 40 in. in the reed, 38 in. in the gray, and 36 in. finished.

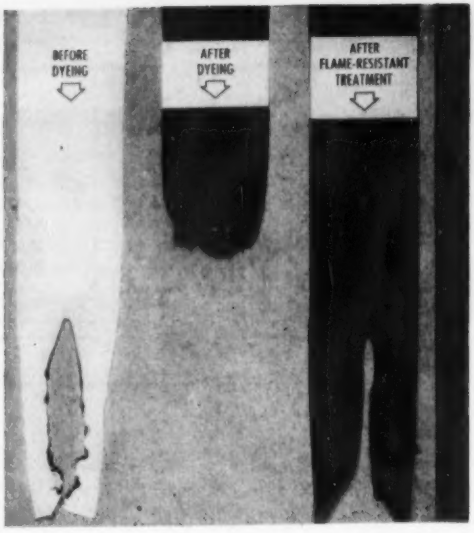
This 12-oz. fabric had adequate strength, resistance to slippage and abrasion, and shrank very little under severe laundering. It had a remarkable hand for viscose rayon and had good draping properties.

From the examples given it will be seen that, although it would be folly to advise 100% production of core yarns, there is considerable scope for their use, not only to increase spinning production and eliminate twisting, but also to produce entirely new structures by a judicious selection of man-made fibers.

A New Way to FLAMEPROOF NYLON

▶ *Flammability of nylon fabric which has been increased by processing can now be greatly reduced by treatment with a new thiourea-formaldehyde resin—Application is similar to urea-formaldehyde creaseproofing treatment—Wash fastness and strength are not decreased.*

By R. C. AXTMANN and A. T. SWEET
E. I. du Pont de Nemours & Co., Inc.



EFFECTIVENESS OF NEW RESIN TREATMENT is shown by the results of AATCC vertical flame tests on a nylon taffeta, (1) before dyeing, (2) after dyeing, and (3) after dyeing and flameproofing with a thiourea-formaldehyde resin.

A GOOD, WASH-FAST FIRE RETARDANT has been developed by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., to meet the demand created by the continued introduction of nylon fabrics into uses which require high standards of fire resistance. The treatment, in the form of a thiourea-formaldehyde resin will materially reduce the flammability level of a nylon fabric when that fabric is, for any reason, more flammable than pure, undyed nylon.

A clean nylon fabric is normally considered to be fire-resistant, since it does not propagate a flame when the source of fire is removed. This property is partly a result of the relatively low melting point of nylon yarn (about 500° F.) which allows the burning fiber to drip away from the rest of the fabric and prevents the spread of flames. However, the flammability of nylon may be increased beyond the allowable limits of fire resistance in several ways: by blending it with certain other fibers; by applying certain sizing materials; and by dyeing it with metallized dyes, such as the chrome colors. In such cases, molten nylon is prevented from dripping away from the fabric and flammability is increased. For example, a mixed fabric of nylon and Fiberglas will burn because the Fiberglas acts as a supporting framework for the molten nylon.

To show the extent to which the thiourea-formaldehyde treatment will counteract such effects, Du Pont gives the following example:

In one laboratory experiment the flammability of a nylon taffeta, as measured by the AATCC vertical flame test, was increased (by a heavy dyeing with a chrome dye) from a 4½-in. char-length level to a point where the whole 12-in. sample was consumed. Application of the thiourea-formaldehyde resin at a concentration of 5% on the fabric brought the flammability level of the dyed fabric back to that of the undyed control.

As would be expected, the concentration of resin needed to flameproof a fabric varies with the degree of flammability, the weight and construction of the fabric, and the nature of the adjutant. In many cases, as little as 2% resin was adequate for flameproofing.

Wash Fastness of Resin

Some indication of the wash fastness of the resin is given by the fact that the application procedure includes a scour after the curing step, and samples given three launderings (AATCC No. 3) in a Launder-Ometer showed no increase in flammability. Bursting strength, tear strength, and individual-filament strength tests showed that treatment with the new resin had no appreciable tendering effect. The porosity was reduced somewhat, and the hand of continuous-filament taffeta fabrics was stiffened considerably with a decrease in crease recovery. A taffeta became quite boardy, but was softened by several launderings. Staple fabrics were less affected by the resin treatment.

Preparation of Resin

The resin is prepared by reacting 76 parts of thiourea with 60 parts of formaldehyde in 200 parts of water (one mole of thiourea to 2 moles of formaldehyde). One part of pyridine is added as a catalyst for the initial reaction. The mixture is heated to about 40° C. to dissolve the thiourea, or to about 80° C. if paraformaldehyde is used as the source of formaldehyde. The reaction is complete in about 4 hr. if the mixture is held at 60 to 80° C. for one hour first. Without initial heating the reaction is complete in 24 hr. The mixture is then diluted with water to give a solution of about 10% solids, and is stored until ready for use.

Just before impregnation of a fabric, 2 to 3% amonium thiocyanate, based on the weight of solids in solution, is added to the solution to catalyze the polymerization; and the pH is adjusted if necessary with dilute sulphuric acid to a level of 3 to 6. This solution is stable for several hours at

(*Continued on page 216*)

Careful Selection and Training Solves *MENDER SHORTAGE*

Your biggest headache, if you're a burling and mending supervisor, is probably the shortage of experienced menders. Perhaps you can benefit from the experience of one mill which solved the problem by using tests to select learners and by careful indoctrination and training.

By MONROE B. SCHARFF

Distribution of
74 Menders' Test Scores and Piecework Averages

	LOW EARNERS (Average hourly earnings 20¢ to $1.00)	HIGH EARNERS (Average hourly earnings $1.00 to $1.70)
PASSED TEST	8	36
FAILED TEST	21	9

Test used was Crawford's Small Parts Dexterity Test, published by the Psychological Corp., New York

***DISTRIBUTION OF SCORES** of low and high earners validated the Crawford Small Parts Dexterity Test for selecting high-earning menders in a Northern worsted mill.*

HERE'S A PLAN USED successfully by a large Northern worsted mill to solve one of its biggest headaches—the shortage of experienced menders. Application of this plan in your plant may give you a chance to start training mender learners who will stick with your department and eventually become producers.

First—get a good test . . .

The first step was to select a recognized manual and fingertip-dexterity test and try it out on a group of experienced menders now in your plant. The mill that used this plan used the Crawford Small Parts Dexterity Test, published by Psychological Corp., 522 Fifth Ave., New York, N. Y. Classify your menders into high and low earners (average hourly earnings) in seniority groups from one year and up. If the high earners, in most cases, make high scores on the test for speed and dexterity and low earners, and those who are just making the average or less, get low or failing scores on the test, then you will know that your test is selective.

Then, get some applicants . . .

Next, put an ad in the local paper saying there are openings for mender learners at your company. Set up the aptitude test as part of your hiring routine for this type personnel. Establish time requirements for passing the test, and use this requirement, plus age, as employment standards. Do not hire inexperienced mender learners beyond the age of 30. You can always change the time requirements up or down depending on how difficult it is to find help who can pass the test. No matter what you do, you will always be picking the best prospects from those who answer your help-wanted ads for learners.

It's not like putting a nickel in the slot and getting a coke out every time. You may turn down a few applicants because of failing the test who might have worked out if given an opportunity. You will, however, turn down many more because of failing the test who would never have worked out well on the job

Attitude is important, too

The test alone is not sufficient. It should, at best, be only part of a carefully worked-out hiring plan. After giving an applicant the test, you will know one thing about her. That is whether or not it looks as though she has the ability and aptitude it takes to be a mender.

If an applicant has the necessary aptitude, as shown by the test, then it must be determined if she wants to do the job? If it is important to hire mender learners, then it should be worth-while to sit down and talk to new candidates to find out whether they have the interest as well as the ability.

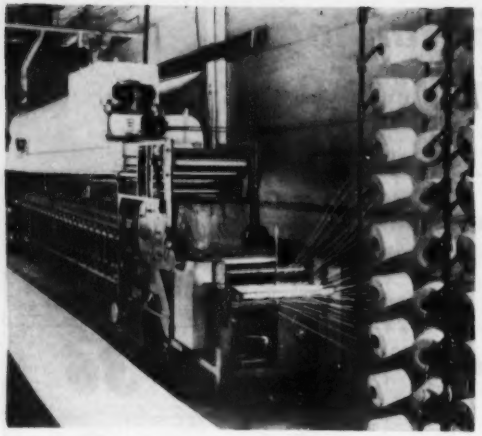
One good selling point is that mending is not a machine-tender job. It is a skill and trade. A mender, once experienced, can always find employment. Working conditions in the burling and mending department are about the best in the mill. Pay is good, but those who take home $75 a week or better really work to get it.

Good training must follow

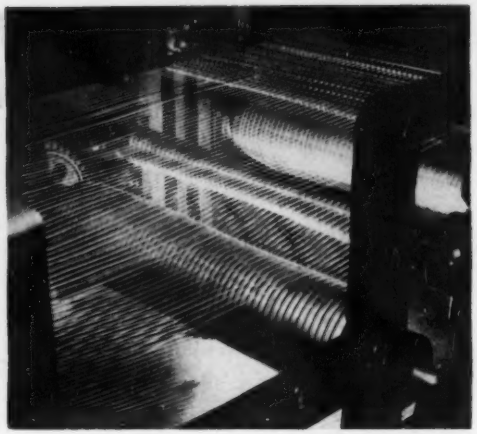
Finally, individuals selected as candidates should be given a chance to see the department and to meet some of the floor ladies and supervisors before signing up for the job. When hiring is completed, careful follow-up should be made to see that proper job instruction is given during the probationary period. The learner should be put with an experienced mender for at least four weeks, and every effort should be made to sustain the learner's interest during this time.

In order to keep teaching costs to a minimum and to maintain good production, the worsted mill that used this system put one top-notch mender on the job of teaching six learners, and gave her a 5¢-per-hr. bonus on top of her average hourly earnings for the job.

You will find, if you follow this plan, that you will not only avoid previous training losses; but you will be improving your chances of developing highly satisfactory young employees to carry on this critical skill.



FRONT END of yarn-treating machine shows the creel of 50 ends running off cones, kept separated and under tension by V-grooved rolls.



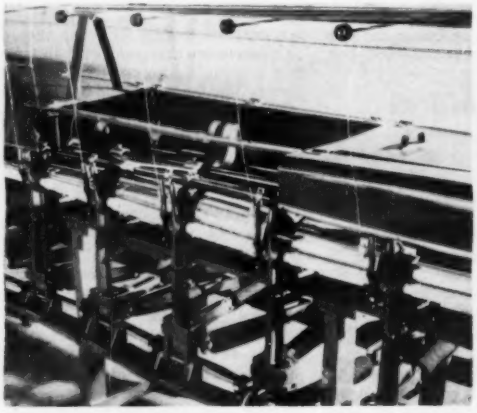
END BREAKS make the machine stop when the drop wires at upper right make electrical contact. Oven is also cleared until break is repaired.

Continuous TREATING UNIT Sets Yarns Permanently

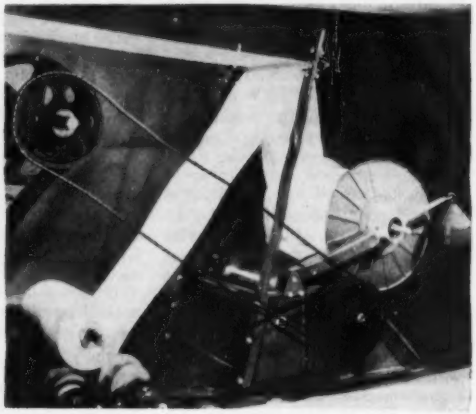
► *A continuous-treating process of chemical impregnation, stretching, curing, and drying so as to improve yarn strength, stability, and appearance was originally developed for cotton, and is now obtaining noteworthy results with synthetics.*

By FRED H. MULLER, *Textile Division, Walter Kidde & Co., Inc.*

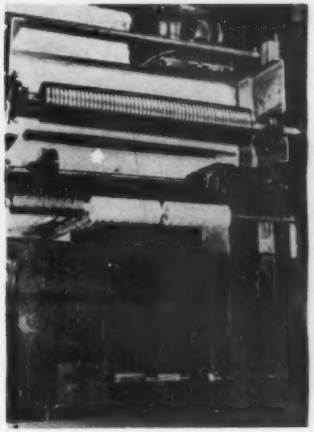
A RECENTLY DEVELOPED yarn-treating machine installed at Electric Hose & Rubber Co., Wilmington, Del., takes 50 ends of yarn from a creel, passes them through an adhesive impregnating bath, stretches them under controlled tension, oven-dries them, and winds them in 50 uniform



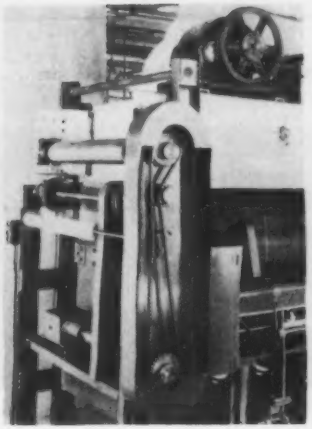
WINDER SPINDLES receive processed yarn from the central oven section. Revolving drums drive the unit.



SECTION BEAMER can be used in place of the 52-spindle winder when static conditions make yarn unruly.



THREADING BAR (shown by arrow) is pulled through to rear of machine at the time of creeling in of ends at the start of a run.



POSITIVE TENSION is applied by grooved roll at rear end of machine. Drying-oven tension can be regulated by chain-gear drive.

TENSION COMPENSATOR can be used between creel and impregnator to eliminate elongation variations.

► In 1945, Dan River Mills asked the Walter Kidde textile division people to consider the development of a machine that would chemically treat cotton yarns, dry them, and maintain controlled tension throughout the process.

A machine was required to impregnate yarn with a water-dispersed chemical, provide a means of drying, and insure a controlled method of tensioning. A continuous-processing unit was needed, with yarn supplied from a magazine creel, that delivered an acceptable package.

Numerous experiments in the over-all speed, size, and tensioning of various yarns indicated that a capacity of 1,250 lb. at 25 yd. per min. for each tension zone would be sufficient. This figuring meant that, in running 50 ends 25 yd. per min., the maximum allowable tension per end per zone was 25 lb. If higher tensions were required, the speed or the number of ends must be reduced.

Since heavy yarns, requiring higher tensions, would necessarily run more slowly for drying purposes than light yarns requiring less tension, a balance between drying rate and tension capacity was therefore desirable, and perfected, for efficient operation.

packages—all automatically and on a three-shift basis.

First there is the impregnator. This section applies chemicals to the cord as it enters the machine. Two rubber rolls reciprocating in opposite directions across the face of a third rubber roll insure saturation of the components by alternately rolling and unrolling the yarn or cord while it is submerged.

The same cord is immersed once again, either under tension or relaxed, after leaving the reciprocating rolls. The cord then passes through a final set of pneumatically controlled squeeze rolls that regulate the amount of chemical pickup.

The tension of the cord entering the bath, plus the tension or lack of it between the first and second dip, plus the pressure of the pneumatic squeeze, plus the actual solids content of the liquor—all are contributing factors to the accurate control of the pickup available.

This impregnation control applies regardless of the cord being treated, whether natural or synthetic. Variables built into the machine provide adjustment allowing for the natural tendency of cord to shrink or stretch upon wetting.

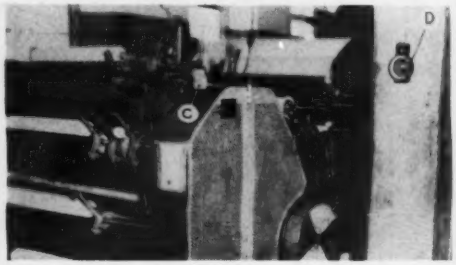
In the second unit—the oven—the chemicals are cured on the cord, and the cord is dried or heat set. The oven is of the balanced heat-exchanger type, wherein recirculated air is the drying medium. A main 2-hp. blower recirculates the drying air while an automatic auxiliary blower exhausts the cord-carrying section of the oven when the machine is stopped off.

To facilitate processing with thermosetting and plastic resins at high speeds, the oven provides two unobstructed 10-yd. passes. Blowers, oil burner, stop motions, and main drive

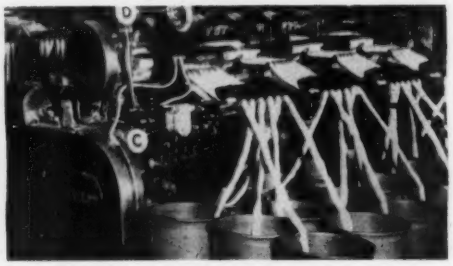
(Continued on page 236)

AUXILIARY IMPREGNATING UNITS can be used with basic machine for mechanical impregnation of hard-to-wet yarns.

Operation-recording instruments can be used on . . . .



Cards . . . .



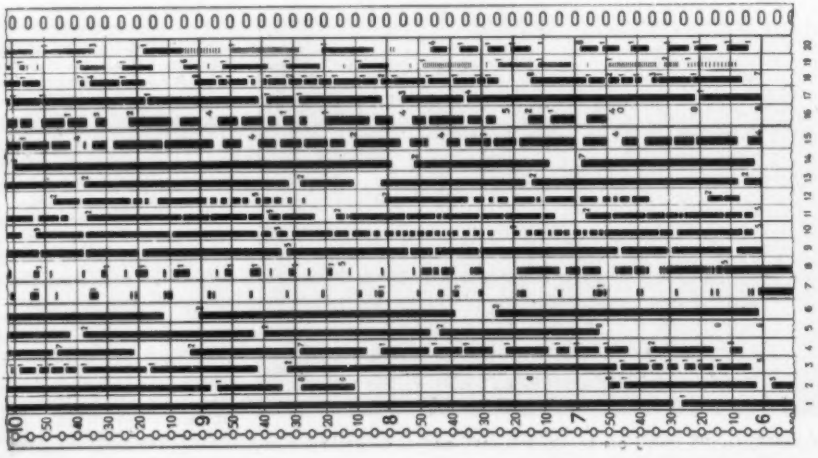
Drawing frames . . . .

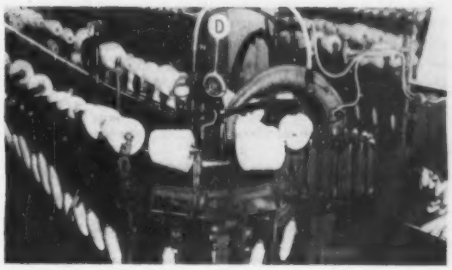
How the Recorder Works . . . .

1. STOPPAGE CAUSES are each assigned a number. When a machine stops, the stoppage-cause number is dialed.

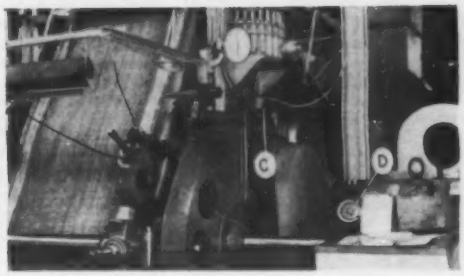
2. THE IMPULSE is transmitted from the dial to this central recorder, and the number of the stoppage cause is imprinted on the tape.

3. TYPICAL RECORD TAPE for 20 machines shows operating time (black lines), length of stops (blanks in lines), and stoppage causes (numbers).





Winders . . .



Printing machines . . .

In right hand picture, C is the machine contact and D is the dial for registering stoppage causes.

OPERATION RECORDERS Help In Making Timestudies

Mechanical recording devices coupled to machines can tell what machines are stopped, when, why, and for how long. Data can assist in making time-studies, furnish wage-incentive information, promote quality control, improve supervising efficiency, and give data for planning and costing.

By ALEX N. ENGBLOM
President, A. B. Dyestuff Chemical Corp., Gothenburg, Sweden

MECHANICAL DEVICES can be a valuable auxiliary tool for the analysis of productivity as well as for other management control functions.

The central registering instruments, together with various auxiliary equipment, will make it possible to get a complete picture of how machines are running, how they are maintained, and how good the methods are. The system can be used for long-time analysis, as well as for daily supervision of machines. With the assistance of a central instrument, the time-and-methods-study man can work up his material for many machines simultaneously. It enables him to move freely among the machines and make his observations of the manual operations.

One particular Swedish mill installed the Centralograph recording system; and after a few years' use, cut down delay times from 7.4% of the total time to 1.1%. The Centralogram reports on the condition and efficiency of the machines have further enabled the mill engineers to determine what machine makes they preferred for the different operations. Such information is valuable as a sound basis for new investments.

An Aid to Timestudy

A timestudy carried out in the traditional way is generally done once and is limited in time for economical reasons. Frequently, we should like to extend the study and thus be able to analyze the causes of delay more thoroughly. This further analysis might enable us to eliminate some of the hidden weak points and to increase the efficiency of the machines.

If we want to achieve the advantages offered by long-period studies, we have to depend on other and more economical means than the manually handled stop-watch. Stop-watch timestudies have also other shortcomings as a result of the limitations of human senses and judgments. The reading of a stop-watch is not a very accurate fixation of the time. It is also difficult for a timestudy man to follow and record the operations on more than a few machines.

The methods-time measurement technique makes it possible to set accurate standards on manual work without a stop-watch. It does not involve the same inaccuracies and judgment as timestudies, but the need for an accurate device for the timing of the machine time has not disappeared. We have a very well-balanced combination when we use the mechanical registering device to follow the machine time and methods-time measurement for the analysis of the manual work.

Workers are only able to influence some of the downtime in processing. Delivery of material or downtime caused by repair are outside the control of the workers. To obtain the best possible production, management has to help workers with the elimination of delays and downtime.

Mechanical registering instruments are useful for downtime control and for prolonged time-analysis. They are widely used in Sweden. When we extend timestudies to a continuous

analysis, we have actually dissolved the borderline between timestudies and the control of machines. The timestudy has become a part of the production-control function.

When we consider mechanical timestudy, I shall discuss the timestudy and the downtime control as a unit, without drawing any fixed borderline between the one and the other.

The best-known types of central registering devices are made in Sweden, and the four most widely used makes are:

L. M. Ericcsons Centralograph
AB Ljussignalers Central-Instrument
AB Telesignals Tempograph
AB Elsignalers Elektrograph

All four machines record machine operations on a chart paper that is fed through the instrument at a constant speed. Each column on the paper corresponds to a supervised machine.

How the Centralograph Works

The Machine Contact

An electric contact is mounted on each of the machines the Centralograph has to check. Contacts on machines in productive operation automatically transmit electrical impulses to the central instrument. The impulses activate small tracing pins or hammers, which record the diagrams on the chart paper. The machines supervised are recorded side by side on the continuously moving paper. The chart is known as the Centralogram.

The machine contact may be operated mechanically by a particular movement on the machine, such as a rotating or reciprocating movement, or electrically in conjunction with the motor on the machine. In some cases, we use machine contacts operating on other principles.

The Dial

A dial that looks very much like a normal telephone dial is mounted on or near the machine. As soon as the machine stops for any reason, the operator dials the code number corresponding to the reason for each particular machine stop. This code number is transmitted to the Centralograph and is printed on the diagram opposite the recorded stoppage to give an indication of why the machine is idle.

The Centralograph Recorder

The Centralograph prints the recordings, lines, and figures on the Centralogram through an ink ribbon in a manner similar to a typewriter. The chart paper is continuously driven past the printing mechanism and out of the instrument by means of a motor running at constant speed. The paper travels a given distance per hour. The drive gear may be adjusted for different rates of paper travel.

The Centralogram

The operation of each supervised machine is recorded in a separate column on the Centralogram. The operating-time registration consists of a series of short horizontal lines, one for each impulse from the machine. These lines form bands with an open or closed appearance depending on the frequency of the impulses.

The reasons for the stoppages are recorded in the Centralogram by figures 0 to 9 immediately to the right of the corresponding machine time registration.

We are able to follow the machine performance closely on the Centralogram. The records show when a stoppage has taken place, how long it lasted, and why it occurred.

The Central-Instrument

The Central-Instrument operates on the same principle as the Centralograph. The tracing system is somewhat different, and is equipped with 24 double-writing drawing pens. Every drawing pin can register the effective working time of two machines on each side of a middle line or a total of four machines.

If we want the reason for the stoppage recorded on the paper, then only two machines can be connected with each drawing pin. When the machine has to be stopped, the worker adjusts a manual contact to the position corresponding to the reason for the stoppage. This contact will give a corresponding registration on the diagram paper.

The varying registration makes it possible to read on the diagram paper how long and for what reason the machines have been ineffective.

(Continued on page 216)

Interested in ASME Membership?

Since mill men will be the major benefactors of the new "ASME Analyzes Mill Modernization" program being carried on by the Textile Section, American Society of Mechanical Engineers, many will doubtless be interested in greater participation through membership.

Three types of membership are available—full, associate, and junior.

A full member must be an engineer or teacher of engineering who shall have had eight years active practice in the profession of engineering or teaching, three years of which shall have been in a position of responsible charge of engineering work and who is qualified to direct such work, or to carry on important research or design in the field of engineering. Graduation from a school of engineering of accepted standing shall be considered equivalent to four years of active practice. Annual dues of full membership are $20, entrance fee is $25. References from five ASME members are required.

An associate member need not be an engineer, but must have a record of recognized leadership in some profession, or branch of industry or science relating to engineering, and shall be qualified to cooperate with engineers in the practice of their profession. He must also be at least 30 years of age. Annual dues of associate members are $20, entrance fee is $25. References from three ASME members are required.

A junior member must be a graduate of a school of engineering of accepted standing or one who has equivalent attainments. Annual dues of junior members are $10 under age 30, $15 for ages 30 to 32, $20 thereafter. Three references are required, at least one of which must be from an ASME member.

Full information and application blanks may be obtained from R. O. Palmer, Chairman, Textile Div., ASME; Carlyle Johnson Machine Co., 40 Edgewood Road, Shrewsbury, Mass.

ASME to Continue Analysis of Mill Modernization at Atlanta Meeting

The papers presented in condensed form in these pages were given at the recent meeting of the Textile Section, American Society of Mechanical Engineers, in New York. The papers continue to carry out the theme of the new textile-section program—"ASME Analyzes Mill Modernization." [TW, Dec., '50, p.103].

Next meeting of the Textile Section is in Atlanta, Ga., at the Atlanta Biltmore Hotel, April 3 and 4. Four papers will be given on April 3, two more on April 4.

Non-member guests are invited to attend the meetings. Invitation cards entitling entrance to the meeting at no charge can be obtained by mill men, by writing to R. O. Palmer, Chairman, Textile Section, ASME, 40 Edgewood Road, Shrewsbury, Mass.

Admission to meetings without an invitation card is through payment of a $3.00 guest-registration fee at the meeting.

These Factors Are Important—

but some are less important than others. Mr. Wrigley's paper discusses each one and its weight in a final decision.

Regional Factors
1. Evaluation of labor
2. Transportation costs
3. Taxes and insurance
4. Attitudes of state governments
5. Fuel and energy costs

State and Community Factors
1. Decentralization
2. Availability of water and waste-disposal facilities
3. Access to transportation
4. Access to energy source
5. Climate
6. Attractiveness, development, and attitude of community
7. Construction costs
8. Labor availability

Building-Site Factors
1. Cost of developing a site
2. Land acquisition in excess of needs
3. Foundation conditions

How to PICK A SITE for a New Mill

► *It's logical enough. First you select a region, then a state, then a community. But there is many a slip possible in taking each step. Here's a complete outline of the process that lists every detail that should be checked on in locating a new plant—details that can hold every element at the minimum-cost level.*

By **GEORGE WRIGLEY, JR.**, *J. E. Sirrine Co., Engineers*

A Two-Phase Process . . .

Selecting a location for a new manufacturing plant must be an orderly procedure if ultimate confusion and much wasted effort are to be avoided.

***DEPENDABILITY AND PRODUCTIVE CAPACITY** of labor is the most important element in selecting a mill site, Mr. Wrigley stated. Construction-cost differentials have little weight.*

The approximate weight of all elements in the cost of operation must be known as an important prerequisite. With this knowledge, the selector may make his study in two phases: elimination by application of predominant regional factors, and final site selection within a chosen region by application of lesser factors.

First—Pick the Region . . .

Suitable regional factors are:

1. The cost of labor: an evaluation of wage rates, productive capacity, and dependability.
2. Transportation costs for raw materials and finished goods, recognizing requirements for speed in special marketing conditions.
3. Taxes and insurance.
4. The attitude of State governments towards the industry, with restricting regulations as a negative element.
5. Fuel and energy costs.

Sound judgment, in addition to statistical analysis, must be used in evaluating these factors. The selector must make a forecast of future developments in the several regions as well as a weighted index of annual cost based on existing conditions. The cost of labor is the predominant element in woolen and worsted manufacturing, and it is a difficult one to evaluate. Wage-rate differentials between regions are fast disappearing, and it is probable that they will exist in the future only between small communities and cities. Thus, the dependability and productive capacity of labor are the important considerations. For lack of more substantial criteria, they must be appraised on the basis of regional labor history and the experience of existing plants within the region.

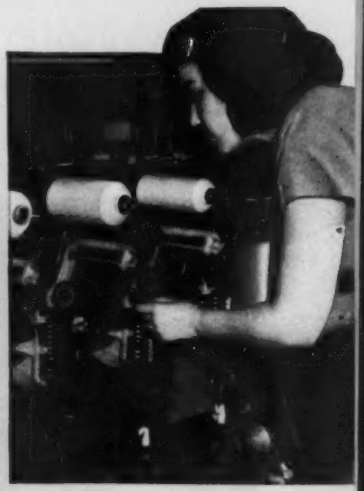
If, by comparison, the selector is able to ascribe a differential of, say, 10% in labor costs between regions, he may proceed readily with the other factors and arrive at a weighted index for each region. He must then examine the favored region for suitable water supply and means for inexpensive waste disposal, assuming that these features should be available whether or not the initial installation is to comprise scouring and finishing. Providing for developments not contemplated in the initial program is important in the site-selection process. It can mean the difference between

A SYNTHETIC FABRIC MANUFACTURER saved 25 percent on formula costs by substituting a Sun Textile-Process Aid for the three competitive oils he had been using. In addition to saving time and money, he has attained a great improvement in smoothness and penetration of the size.

HOW 4 MANUFACTURERS HAVE BENEFITED FROM SUN'S TEXTILE-PROCESS AIDS

By switching to Sun Textile-Process Aids, each of these four manufacturers improved quality, increased plant efficiency and effected substantial savings. The results are typical, not unusual . . . *complete details available on request.*

More and more textile manufacturers are turning to Sun "Job Proved" Process Aids to cut costs, speed production, improve quality, protect valuable machines. Why not get more information from your Sun representative? His services are free for the asking. Just call the nearest Sun Office or write to Department T-3.



A WOOL PROCESSOR increased his yield 3 percent when he changed to a Sun Textile-Process Aid. It improved the quality of his finished product, and speeded up production by saving preparation time and penetrating the wool fibers quickly and thoroughly.

A COTTON FABRIC MANUFACTURER ended his corrosion troubles by switching to a Sun Textile-Process Aid. At the same time he improved the quality of his fabrics, speeded up production, and widened the profit margin. In oil costs alone, he now saves $1,000 a year.

A NYLON THROWSTER found that a Sun Textile-Process Aid gave better lubrication and protection to the sized thread. It reduced breakage and also eliminated preferential pickup. Along with economies in production, he has lowered his oil costs substantially.

SUN INDUSTRIAL PRODUCTS

SUN OIL COMPANY, PHILADELPHIA 3, PA. SUN OIL COMPANY, LTD., TORONTO AND MONTREAL

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continued successful growth and abandonment in the middle of the expected life of the plant.

Then Select the State . . .

A refinement of the regional analysis may now be made to select a State within the favored region. Before consideration of a specific community or town, the following matters deserve attention. Decentralization of industry as a basic policy has much to recommend it. Developments in warfare, and our present national situation, indicate it at present and may demand it in the future. The manager of a small plant has the opportunity of knowing his workers personally, and may thereby attain their respect and loyalty. Higher overhead costs are against decentralization, but typical experience indicates that they are outweighed by the more advantageous labor situation.

The mill may be located in a section predominantly agricultural, or in an urban section where skilled workers may be found readily. Workers coming direct from the farms are by nature more diligent and self-reliant than city-bred people. In some rural regions, an adequate supply of fit workers may be expected to come from a radius of 20 miles, or even more, traveling to and from their homes at their own expense. A mill in a rural situation must expect to start up at a handicap because of lack of skilled workers, but it may also expect to experience low labor costs in the long run.

To proceed with the second phase, it is now necessary to make field surveys to establish availability of water and waste disposal, an energy source within reasonable distance, and access to rail and truck shipments.

A choice in climate should be considered from the standpoint of its influence on the workers. It is now generally recognized that air conditioning, in the general sense, is a sound investment within the mill, but unfavorable climate has an obvious effect on the workers in their homes.

The attractiveness and civic efficiency of the adjacent community or town deserve careful study. Its development in terms of hospitals, schools, recreation facilities, honesty of local government, restrictive regulations, taxes, and its desire to have and to help the new mill are features to be weighed and compared with other situations. The community judged as a homesite has importance not only because of its influence on the workers but also because it will be found difficult to staff the administration of the mill if their families must live in a drab atmosphere.

Construction-cost differentials have little weight in site selection. These costs enter as a fraction only of the annual burden; and, if the location has been fixed by mill labor costs as predominant factor, construction costs may be assumed to be low also.

It is prudent to survey the local labor situation in an attractive location for availability, and for adverse conditions, such as the existence of another large industry paying disproportionate wages.

An alternate procedure would be to make labor surveys at several feasible locations, and to use them for selection. This is somewhat cumbersome because even the most elaborate surveys frequently do not yield convincing differentials, and it can be assumed ordinarily that the regional character of the labor supply will apply in any specific location.

Selecting the Building Site . . .

With the location fixed satisfactorily, the selection of a building site may proceed. The criterion now is the cost of developing a site to fit the mill needs. Developments in grading equipment have kept grading costs relatively low, and an extensive search for a "level site" is seldom warranted. In addition, a "level site" is often found to be underlain by recent alluvial soils and, therefore, makes poor foundations; and a careful flood study may prove it to be hazardous. Excessive rock excavation, however, must be excluded.

The survey should cover these site features:

1. Topography, foundation conditions, rail and highway access, cost of land.

(Continued on page 214)

100s Combed Viscose Yarn Made by Snia Viscosa

By **FRANK PERUTZ**, *U. S. Resident Engineer, Snia Viscosa*

AN INTERESTING DEVELOPMENT in the Italian plants of Snia Viscosa is the spinning of high-count combed yarns made of viscose rayon. The experimental and production unit, Altessano, in Turin, deserves the credit for this development work. This unit operates on the French worsted system; and the equipment, which has been furnished by the Société Alsacienne de Constructions Mecaniques, has been especially adapted to the spinning of such yarns.

Fibers of lengths of 80 mm., which is a little above 3 in., 1- to 1½-den., are being used.

After opening, the fibers are carded on a doubled worsted card. The resulting sliver passes through two intersecting machines, getting ten doublings on the first and three on the second machine.

It is then combed on the SAG French comb where it is given 28 doublings, passes through another intersecting machine with six doublings, and the finisher with seven doublings.

The resulting tops, which can be obtained from our company, are then passed through three intersecting processes with eight, four, and five doublings respectively. From there(stock is passed through the coarse bobbiniers intersecting machine with two doublings, fine bobbiniers intersecting machine with three doublings, the porcupine with two doublings, and the porcupine finisher again with two doublings.

On the very fine numbers, some of these processes must be repeated, and the result is about nine passages of the tops before reaching the spinning frame.

There are about 500 doublings in this process.

The yarn is spun with a draft of 18 to 20 on normal worsted ring spinning frames. Similar yarns can also be produced on the Shoppe system, the number of processes being approximately the same as are necessary on the French worsted system.

These very fine yarns have been used in many fabrics in Italy where they replace combed yarns made out of Egyptian cotton. They are at present used by one of the most prominent manufacturers of men's suitings in this country in a fabric which has been widely advertised.

We have been able to obtain numbers as high as 100's in this spinning process.

DYES
designed for
NYLON

DU PONT NEUTRACYL—
neutral dyeing colors—

have been designed specifically for nylon . . . to produce the *highest possible light fastness.* They can be applied in the same time cycle as acid dyes . . . but have decidedly superior light and wet fastness.

The NEUTRACYL dyes, such as Yellow 3RD, are recommended for dyeing nylon staple in stock, top or tow form. The dyed staple can then be converted into fabrics requiring superior light fastness—such as upholstery materials, pile fabrics, suitings and shirtings.

NEUTRACYL dyes are suitable for dyeing wool, giving fastness properties similar to nylon.

For information on these new NEUTRACYL dyes . . . or for help on any coloring problem . . . consult our Technical Staff. E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Division, Wilmington 98, Delaware.

Du Pont Dyestuffs

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

In the process of aging for the fixation of vat colors, the major difficulties are centered in the steam supply and the mechanism of the steam chamber.

Condensate can be corrected by adequate vents, sufficent steam, the correct use of backgrays, and good steam traps and drainage.

Correct regulation of tension on goods entering and leaving steam chambers prevents sticking to rolls and "piling up" of fabric.

VAT-COLOR AGING
Calls for Strict Control

By T. N. PATRICK

Condensation onto Blotch Grounds

A fairly common cause of trouble in aging is condensate resulting from an excessive flow of steam from the outlets. This, in most cases, can be taken care of by fans situated in correct positions.

On the other hand, it will sometimes happen that the steaming chamber is awkwardly placed and that adequate provision has not been made to vent all the steam vapor issuing from outlets. A similar position will also arise if a fan breaks down so that issuing steam does not have free exit to the atmosphere; condensation will then take place on beams, etc., especially if fluff has been allowed to collect, and will then fall onto entering or out-going print goods.

The fault is naturally most pronounced when drops of condensate fall on in-going cloth, as then springing or flushing of the print is most likely to occur during passage through the steaming chamber. If white discharge prints are being produced, the fault will take the form of an irregular enlargement of the discharged print area. In the case of color discharge work, a large white halo is likely to form around the colored areas.

FESTOON AGERS. With a festoon ager, it is well known that condensate forming on the poles is likely to give rise to damage at regular intervals right across the pieces. In one instance it was observed that dirty-water marks had formed across printed cotton pieces at 6- to 8-yd. intervals. The spacing of the marks led to the conclusion that they were from steaming.

Further examination revealed the fact that drops were prone to form on the brass poles of the festoon chain under certain conditions. In this particular instance, it was discovered that from time to time there was a deficiency in the hot-water supply to the tank in the bottom of the aging chamber. When the supply of hot water got low, the operator was in the habit of using a cold supply. The result was that a rapid cooling down of the chamber took place, causing immediate formation of condensate on the metal surfaces of the festoon poles.

The cold water, by inducing condensation, also very quickly reduced the pressure in the aging chamber and had an adverse effect on the fixation of vat colors being processed. In such cases it is necessary to insure the continuous supply of water from a hot well or flash-steam tank situated convenient to the aging chamber.

POLE-CONDENSATE CURE. A temporary cure may sometimes be effected by proper use of the backgray that is generally used along with the goods being run through. The usual plan is to run a printed piece on either side of the backgray, with the result that three webs or pieces are passed through the chamber simultaneously. When the poles have become damp by reason of condensate, springing of the colors in the printed goods can be avoided by running the backgray next to the poles while steps are being taken to remove the cause of condensation. The backgray will absorb surplus moisture from the poles and so prevent flushing of the prints.

In many cases, it is possible to run two pieces together on top of the backgray when patterns and cloths are light. This procedure should not be attempted, however, with blotch prints on heavy cloths.

A further cure for this trouble is to use a branch of live super-heated steam so as to raise the temperature sufficiently to dry up condensate. This procedure will raise the temperature of the aging chamber considerably and is generally undesirable, especially where vat colors are being processed.

For white discharge prints this last-named remedy may be successfully applied, but should as a general policy be avoided. Preventive measures should, in all cases, take the place of temporary and doubtful expedients.

Under-heated Take-in Rolls

In the festoon type of ager, fabric is fed into the chamber by means of two steam-heated rolls situated on one of the steam chests forming the top of the machine. The steam chest in question is cast with an aperture which in actual operation is practically sealed by the two heated rolls geared together and provided with special steam-tight glands and bearings.

In the particular instance under consideration, print pastes accumulated on the surface of the heated rolls. As the accumulation increased, marking-off onto the incoming goods occurred, and production had to stop.

It was discovered that the outlet of the steam trap controlling the drainage of the heated rolls had become stopped up, with the result that condensate was lodging in the cavities

TEXTILE AIR CONDITIONING

by Bahnson

A Bahnson Humiduct unit air conditioning system in this modern plant maintains humidity and temperature control in the rayon weaving room, but—whether processing rayon, nylon, cotton or wool, Bahnson engineers will study *your* particular requirements and recommend the Bahnson system best suited to *your* needs . . .

HUMIDUCT UNIT SYSTEM

CENTRAL STATION AIR WASHER SYSTEM

CENTRISPRAY AIR WASHER SYSTEM

AIR VITALIZER SYSTEM

Bahnson Engineering is based on 40 years experience in textile air conditioning and Bahnson equipment assures maximum efficiency at minimum cost.

The Bahnson Company

ENGINEERS AND MANUFACTURERS

WINSTON-SALEM, N. C.

of the rolls. This situation, in turn, led to a lower temperature on the outer surfaces of the rolls, and thus caused condensate.

Here the trouble was cured by attention to the steam trap and the arrangement of a correct means of drainage.

"PILING UP." Another fault which can cause trouble is known as "piling up." If, for example, very light handkerchief goods, printed in blotch patterns, are being processed, there is a tendency for such goods to absorb moisture when lying in pile prior to aging, and after printing. This tendency, in conjunction with the cooling-off of the steam-heated rolls by faulty drainage as already described, brings about a condition in which the incoming goods stick on the rolls instead of being carried into the body of the steaming chamber.

When this situation arises, one of two things will occur: either the cloth will be carried right around one of the intake rolls; or else, if the sticking effect is very slight, it will be freed by the doctor blade that is used to keep the roller free from accumulations of fluff and other materials.

In the first instance, accumulations of cloth round one of the rolls may lead to serious damage of part of the machine and will, at least, damage a number of yards of printed cloth. In the second instance, "piling up" of fabric on top of the festoon poles occurs because of the displacement of the incoming cloth in relation to the festoon-forming mechanism.

Discharge Faults

In discharging a white pattern on a certain light diazo green dyed handkerchief cloth by screen printing recently, a faint mark-off showing a reddish tinge on the ground was observed. The particular dye used was known to turn reddish by a very slight reducing action, as seen by the reddish halo on the edge of the white discharge. The fault was the result of a slight creasing action during the entry of the goods into the take-in rolls situated on top of the aging chamber. A similar fault might have occurred as the goods left the chamber, through their being creased against the edge of the mouth-piece on the delivery end of the machine.

The fault was overcome by taking extra precautions in holding out the goods in entering the chamber and by the use of a backgray with the printed material. Risk was also minimized by cutting down the amount of reducing agent to 6 oz. per gallon instead of 8.

Preventing Condensate

An important point in the prevention of condensate is the protection of the aging chamber from cold drafts. This set-up can usually be provided for by the use of properly situated sheeting and by insulation of the outside of the chamber by any of the usual methods.

A method which has given good service in practice is to sheet in the chamber with fiber-board or light-metal sheeting placed on a framework 6 in. from the body of the chamber. This arrangement places an air layer between the outside atmosphere and the outer surface of the actual steaming chamber and is very effective in the conservation of heat and prevention of radiation.

A further precaution to prevent creasing at the delivery end was filling the aging chamber with printed goods on both sides of the backgray run in along with the goods; the usual aging or steaming time was then given and the steam turned off. The goods were then run out of the chamber by opening the mouth-piece at the delivery end so that creasing against one of the edges could not possibly take place.

This procedure in practice, of course, means intermittent work; but when expensive screen-printed goods are concerned, it is worth while.

Pawl Trouble

In festoon aging an important item is the mechanism which forms the loops or festoons of cloth which are being passed continuously through the ager. If for any reason the pawl fails to function, the festoons do not form, but pile up the cloth on top of the poles of the festoon chain. This situation, in turn, gives rise to marking-off, not to mention poor and irregular fixation of the colors in the piled-material.

To overcome the fault, the first precaution is to dry the goods hard after printing and then age immediately after drying. The print paste may also be much thicker than necessary, thus allowing too much to remain on the surface of the cloth. Modification of the print paste is possible to some extent without spoiling the "cover" effect.

As well as a thinner print paste, the amount of water-absorbing ingredients, such as glycerine and urea, may also be reduced. This step means that the prints will not absorb so much moisture during aging and will not, therefore, become sticky. Thus smearing on the pawl and thence on the goods can thereby be minimized.

A further important point here is to process such goods as soon as possible after printing and so avoid the absorption of moisture through piles of goods lying in cold draughts. This is a usual precaution so as to avoid uneven fixation and development of vat colors in printing, and should in all cases be strictly observed.

In the case of "cover" prints, trouble can sometimes be avoided by aging the pieces along with the backgray in such a way that the backgray is run next to, or in contact with, the pawl. In addition, the fluted sections can be removed and replaced with round, smooth sections; while at the same time the pawl shock-absorbing mechanism can again be put into commission.

Delivery-End Problems

The general arrangement for the removal of goods from the delivery end of a festoon ager consists of a slotted aperture in one of the steam chests. This aperture may be closed either by two steam-heated rolls or by two copper kidney pipes, also steam-heated, to prevent condensation from the issuing steam along with the outgoing cloth. In some cases a 3-bar tension rail is fitted inside the chamber to regulate tension as the piece passes from the machine. This latter idea is used principally along with the kidney-pipe type of outlet, because in such cases there is no positive drive (as in the case of the steam-heated rolls) to grip the cloth as it leaves the machine.

In one instance when this type of tension was used with one of the bars revolving so that a greater degree of adjustment could be obtained, it was discovered that the revolving bar gave trouble from time to time. Generally, the fault arose when processing fine handkerchief goods printed in heavy patterns. If such goods were even slightly moist, they tended to stick to the revolving bar, which in turn eventually became slightly coated with print paste. Then if a loose end or broken selvage came along, these in turn adhered to the revolving section of the tension bar.

To clear the obstruction, the chamber had to be opened and production suspended for a few hours. In addition, goods being processed were unevenly fixed because of the entry of air into the chamber during the shut-down. (With care, such goods may be padded in a thickened solution of reducing agent and alkali and re-aged to level them up.)

This particular fault was cured by adjustment of the tension bar and cutting out the revolving section so that the loose ends could not be carried around.

The Warner & Swasey-Pacific Converter

THE CONVERTER solves a serious problem—the problem of stretching limited quantities of expensive wool to meet the increased demands for quality fabrics.

To do this, manufacturers must turn to synthetic-blended fabrics. Synthetic tow is becoming more readily available. Blended with wool it is made into a variety of types of materials—materials that are stronger, longer lasting, shrinkproof, and less expensive than pure wool worsteds. Change-over is easier and quicker—you save several days compared to other systems.

The Converter produces the quantities of accurately blended sliver to fill these requirements. This machine cuts continuous tow to desired lengths, either uniform or varied, up to six inches maximum. It blends these synthetic fibers with wool, accurately and evenly, to form crimped sliver, ready for further reducing operations.

And the Converter is a real cost saver. It completely eliminates such operations as opening, mixing, carding, picking, and combing. Its original cost is only a fraction of the cost of the machines it replaces.

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YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS . . . WITH A WARNER & SWASEY

Here's How to Cut Out JERKED-IN FILLING

► *Jerked-in filling can be a source of many headaches and can run your inspection costs up.*

► *Most jerked-in filling results from faulty filling cutting, snags, or poor timing.*

► *Cut out your jerked-in filling by following the ideas used by Locke Cotton Mills Co., as shown here.*

By W. A. THOMASON, JR.
Southern Editor, TEXTILE WORLD

LOCKE COTTON MILLS CO., Concord, N. C., was having trouble with jerked-in filling in heavy pebble cloth, and here are the steps they followed to remedy the situation.

If the cutter is holding the end and the knife is cutting properly, you will not have jerked-in filling. If the filling is not being held and cut properly, then the trouble is caused by either bad condition of the cutters or knives, snags, or poor timing.

If you are getting jerked-in filling, three steps should bring the defects under control.

First, check the thread cutters, knives, catchers, feelers, etc., to make sure that they are working properly. On Draper looms, install Stafford thread cutters if you don't already have them.

Second, see that all parts that the filling comes in contact with are smooth and permit the filling to work freely over them.

Third, see that the loom is timed properly, the shuttle is boxing correctly, and that you are not using too much power.

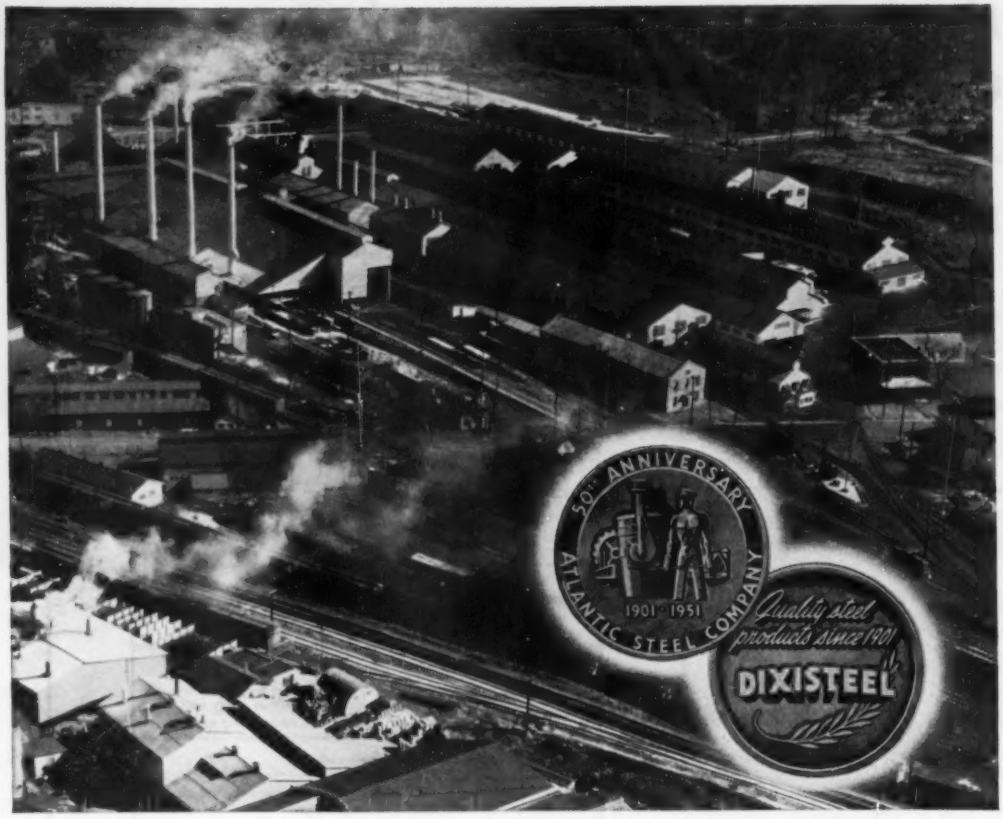
The accompanying checklist highlights the items which should be checked on Draper and C&K looms. You will notice that good loomfixing is the key to preventing jerked-in filling.

Check List

TO HELP YOU CUT OUT JERKED-IN FILLING

For C&K Looms	
1	Set and time the pick motion
2	Keep a good groove, eye, and bristle in the shuttle
3	Set the meter cam so that it checks the shuttle in the box end to prevent running the binder too tight
4	Wrap mouthpiece with flannel or slasher-blanket cloth to hold the filling while the shuttle is out of action
5	Use a filling separator to keep the different yarns in the box separated
6	Keep quill cans under loom as near empty as possible so shuttle and filling tail have plenty of room to fall out of the loom on the transfer

For Draper Looms	
1	Use Stafford thread cutters
2	Check cutters, temples, and temple knives every day to see that they are correctly set and are working properly
3	Keep the shuttle boxing properly
4	Keep the screw in the back of the picker well imbedded so that there will be no rough edges
5	Be sure that the picker is parallel
6	Keep the leather in the box front and the leather bumper in good condition
7	Dress splinters and rough spots off the picker stick from the check strap up to the picker
8	Check shuttle feelers daily to see that they hold and cut properly
9	Check filling forks to guard against hanging
10	Use a third-end catcher to keep the shuttle from dragging an extra end into the cloth
11	Maintain enough tension on the filling to hold it up and in the shuttle groove
12	See that the loom is timed properly
13	Keep the lay smooth
14	Keep bolts in the lay tight
15	Avoid using too much power on the loom



Fifty years of steel making IN and FOR the SOUTH

March 5, 1951, marks the Golden Anniversary of Atlantic Steel Company.

From a small mill rolling hoop for rosin barrels and ties for cotton bales, employing only a handful of men, Atlantic Steel Company has *grown into a full-fledged steel mill producing 65 different products in thousands of sizes, and employing more than 2,000 men.*

Today the name DIXISTEEL is known throughout the South and from California to New England.

Founded by a small group of business men who had faith in the future and a desire to help build the South they loved, Atlantic Steel Company stands today a tribute to their vision.

Through all these years—through three major depressions and two World Wars—Atlantic Steel *Company has been guided by firm business policies that have stood the test of time.*

We enter our second half-century with the greatest expansion program in our entire history —the best evidence of our continued faith in the future and the South.

ATLANTIC STEEL COMPANY

ATLANTA, GEORGIA

BODY ..... SLEEVES ..... LEGS

THESE THREE OPERATORS are part of a group sewing one style of children's sleeping garment. The garment body is being seamed on a Merrow machine; flatlocks are used on the sleeves and legs.

SMALL SEWING UNITS
Ease Production Planning

- *E-Z Mills assigns operators and machines in groups*
- *Straight-line flow of material eliminates delays*
- *Operators and fixers are trained as specialists*

By **E. DALTON WHITE,** *McGraw-Hill Atlanta Bureau*

SMALL PRODUCTION GROUPS operating as units have solved work-scheduling problems in the big sewing room at E-Z Mills, Cartersville, Ga.

The mill has 412 sewing machines in 15 different machine classifications. It produces underwear and sleeping garments in a wide variety of styles and sizes for infants and children.

With these complex sewing-production demands, a good system of scheduling and controlling production is necessary for efficient operation.

E-Z Mills approached the problem from three angles. First, flexible production units were set up. Then machines in each unit were arranged for straight-line flow of work. Finally, efficiency was obtained through application of time-and-motion studies.

Designing, knitting, bleaching, dyeing, napping, cutting, sewing, and styling are all carried out at the mill. Without backtracking, material moves from knitting to bleaching and dyeing to napping to the cutting tables or stockroom.

Sewing-room production orders begin at the cutting tables. Up to 60 or 75 thicknesses of fabric are cut at one time on the 96-ft. tables. Garment bodies and fillings, cut to order, move from the cutting tables to the proper supply tables in the sewing area. A good supply of garment parts is maintained at all times to prevent sewing-machine stoppage.

GROUPS. In the sewing area, production groups are assigned so that all

(Continued on page 232)

SEWING LOTS begin at 96-ft. cutting tables where 60 to 75 fabric thickness are cut to order.

Sewing Machines in Place

121	Wilcox & Gibbs flatlocks
60	Merrow A-3-D
16	Reece buttonhole machines
20	Metropolitan, class 950
6	Union Special, class 19300
2	Union Special, class 51200
10	Union Special, class 51400
10	Union Special, class 51700
80	Union Special, class 52800
30	Singer, class 24-70 chain stitch
22	Singer, class 79-2 tackers
13	Singer, class 95-40 and 95-60
17	Singer, class 114-33 button sewers
3	Singer, class 147-101
2	Singer, class 149-3

Total: 412 machines in 15 classifications

DOING THE BEST WITH A

"Tight Squeeze All Around!"

Supplying unprecedented customer demands in the face of many raw material shortages is today's big challenge to the Chemical Industry. A "tight squeeze" is being felt all around, and each producer is working hard to overcome his particular part of the problem.

In the field of heavy chemicals, for example, lack of sulfur has meant curtailments in production of Sulfuric Acid and other important industrial chemicals made from it. As a major producer, General Chemical is using every possible tool to make increased tonnages available. Equipment is being converted to the use of sulfur-bearing ores, gases, and other alternate raw materials—all with the view to serving customers as efficiently as possible.

And this is but one of the problems that must be met by General—and by the Industry as a whole.

They will, too!

The same hard-driving effort, the ingenuity, and the close teamwork that have whipped so many tough problems in the past will do so again.

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Some Tips

- Mix staples according to the kind of fabric you want
- Avoid extreme tension and hard cones
- Keep in mine that high twist will give more wearability
- Handle the nylon in small skeins
- Remember that crimp-set yarn may give you more loft and stability

Engineer NYLON YARN For a Particular Use

By R. L. VOIGT and J. A. NEWMAN
Nylon Technical Service Section, E. I. du Pont de Nemours & Co., Inc.

SPUN-NYLON YARNS should be engineered for a particular end use. Using 3-den.-per-filament staple, you can have a soft, fine, pleasing handle. On the other hand, 6-den. staple creates a crisper effect such as might be found in a man's sweater, where the rugged handle of a coarser fiber is desired. A blend of 3- and 6-den. staple will provide a softer texture without losing the firming effect of the higher denier.

It's often possible to get more loft and yarn stability by using crimp-set nylon yarn. Its greater covering power and loft permit the use of higher twists. Garments knit from this yarn appear to show improved retention of their original appearance during wear and laundering. Crimp-set yarn may require slightly different machine adjustments and higher temperatures during heat setting.

Nylon yarns possessing high twist will usually process well and improve the wearability of the finished fabric. A characteristic Bradford-spun yarn made from 4-in. or 5-in. staple would probably contain a minimum of 6½ to 7 tpi. for a 2/20 worsted-count yarn. For shorter lengths, such as 2½-in. and 3-in. staple on the American-worsted or French-worsted systems, higher twists can generally be used without sacrificing good loft.

KEEP THE TENSION DOWN. It is advisable to handle, ship, and store nylon yarn in skein form. The yarn's pressure on a cone sometimes reduces its loft and produces unevenness.

In winding, the skein as delivered to the "runner" or swift should be small and laced in at least two places to prevent strands of yarn from interlocking. For a 2/20 worsted yarn with the proper twist, satisfactory running performance is usually obtained with 2-oz. skeins. Heavier skeins may cause excessive snagging and catching of fibers.

It is important to produce soft cones by winding with minimum tensions, and, if possible, by backwinding. Hard cones may cause some portions of the yarn to become lean. When this happens, thin spots in the yarn may worsen. Running the yarn over regular knitting wax helps to insure smooth knitting performance. And if you avoid knots, you'll stop many undesirable defects in the fabric.

Nylon's high elasticity and its tendency to return to its original length calls for low tensions during knitting. Tensions which are too high may reduce knitting efficiency and lead ultimately to fabrics that are improperly sized and have a boardy handle.

TIPS ON CLEANING. Knitting machines should be kept in proper adjustment and as clean as possible. Variations in humidity may affect knitting performance; so set cams accurately and check them frequently. Dirt stains can usually be removed by ordinary scouring methods, although sometimes a "Textrone" scour may be necessary for severe soilage. Oil and grease stains usually come out with use of dry-cleaning fluid.

When knitting with nylon, be sure you've got perfect needle action to avoid breaking the machine. Operators should be alert for skipped stitches and yarn buildups. Needles will snag fewer loose filaments of yarn if there is sufficient twist and if the yarn is passed over knitting wax. If crimp-set staple is used, it may be advisable to knit looser stitches or use high-count yarn to compensate for added covering power.

In producing nylon garments, both yarn and piece dyeing are being used; each has its particular advantage. Skein dyeing may result in a more lofty yarn than does package dyeing.

DYEING REMOVES FINISH. Remember that yarn dyeing, whether by skein or package, will remove the antistatic finish that is currently applied in the manufacture of nylon staple. This finish, "Avitex" R fiber lubricant, should be reapplied in the final rinse to prevent excessive static in the winding and knitting operations that follow.

Bear in mind that dyeing prior to heat setting causes some shrinkage and relaxation of nylon fibers. For instance, sweaters made from non-crimp-set yarns that have not been preboarded, may shrink 6 to 8%, depending upon yarn-tension history and severity of the dyeing process. The shrinkage in crimp-set yarn or heat-set piece goods will be considerably less.

In addition to acetate dyes, acid dyes are giving improved fastness in sweaters, as well as in nylon garments.

Cut Maintenance and Replacement Costs with these two Benjamin

Humidity-Defying TEXTILE LIGHTING SYSTEMS

New Porcelain Enameled Channels and Reflectors for Continuous-Line Lighting

Porcelain Enameled Channels with special provisions for moisture-proof line-wire entrance and conduit suspension, are now available with this new Benjamin "Lite-Line 40"* Porcelain Enamel System. Especially designed to combat the excessively moist atmospheres found in textile mills, these new units are completely protected against the danger of rust and deterioration due to moisture accumulation.

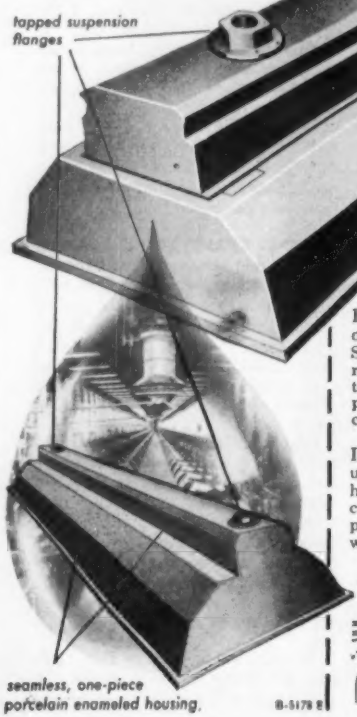
A virtually unbroken surface of durable Porcelain Enamel covers the channels. Two cast metal flanges provide a moisture-proof method of conduit suspension and wire entrance. Thus, the Benjamin "Lite-Line 40" System provides longer life and less maintenance because there is no place for rust to get a foothold.

In addition, the user gets all the maintenance cost-cutting advantages of the exclusive Benjamin "Springlox" and "Lok-Latch" advancements, described here.

*for use with two or three 40-w, 48" bi-pin lamps.

All-Porcelain Enamel Individual Unit Lighting

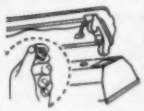
In locations where a lighting system of individual units is preferred, Benjamin "TX-40" Units* meet all the requirements for long-life, trouble-free service in the highly-humid atmospheres found in the textile industry. This one-piece, All-Porcelain Enamel Unit completely protects against rust due to the accumulation of moisture.



The one-piece steel construction, by virtue of which the channel becomes an integral part of the housing, makes possible a smooth, unbroken surface of "Life-Time" Porcelain Enamel. There are no cracks or crevices where moisture can collect. Special construction of tapped, cast metal suspension flanges, the same as those found in the "Lite-Line" System, prevents entrance of moisture around conduit stems.

In addition, "TX-40" Units bring the users the famous "Springlox" Lampholders, illustrated at right, and a Porcelain Enameled removable reflector plate for easy access to ballast and wiring.

"Lok-Latch" Reflector Fasteners



Self-adjusting, hand-operated "LOK-LATCH" FASTENERS on "Lite-Line 40" reflectors cut maintenance time by permitting easy removal of reflectors.

Some Facts About "Springlox" Lampholders

Here are some of the tests which "Springlox" has passed in the Benjamin Development and Testing Laboratory:

(1) Humidity Chamber Test—1000 hours in 95% humidity at a minimum temperature of 95° F.
(2) Spring and Contact Fatigue Test—8000 simulated lamp changes.
(3) Vibration Test—100 hours at 25 cycles per second.

4 Ways in which "Springlox" Cuts Maintenance Costs:

(1) Only ½ the usual number of service stops required . . . all lamp starters are in one spot (as many as 6 lamps and 6 starters can be replaced from one location on an 8 ft. "Lite-Line 40" channel.)
(2) Permits one-hand lamp insertion
(3) Locks lamps in place
(4) Cushions them against vibration.

Get Up-To-Date on Humidity-Defying TEXTILE LIGHTING! Send for LATEST, FREE DATA BULLETIN—write Benjamin Electric Mfg. Co., Dept. EE, Des Plaines, Ill.

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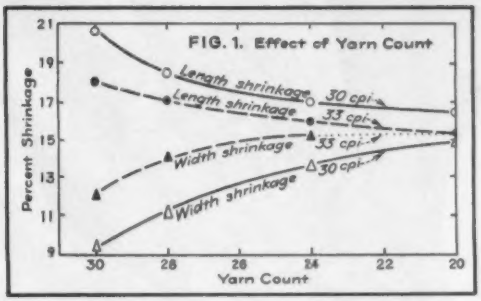
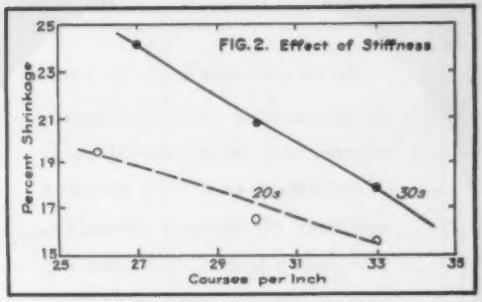


KNITTED RIB FABRIC with coarse yarn had less shrinkage than equivalent fabric with finer yarns.



COURSES PER INCH affect shrinkage of rib fabrics. Shrinkage ranges from 16% at 35 courses per inch to above 25% at 25 courses.

Knitting Techniques
Fix FABRIC SHRINKAGE

HIGHLIGHTS: *Yarn counts, courses per inch, and calendering methods may be revised to cut shrinkage of underwear—Major portion of potential shrinkage is introduced during knitting operation.*

By LOUIS I. WEINER
Textile Finishing Research Laboratory, Philadelphia Quartermaster Depot

POTENTIAL SHRINKAGE of knitted underwear may be reduced by as much as one-half through the combination of correct knitting and finishing conditions. Proper choice of yarn, machine, knitting, and calendering techniques results in a fabric that shows balanced shrinkage in length and width during finishing and that shrinks 50% less during laundering than most conventionally manufactured fabrics.

These facts were obtained at the Textile Research Laboratory of the Philadelphia Quartermaster Depot from special studies of relaxation or laundering shrinkage of knitted underwear. Test results showed:

1. A major portion of potential shrinkage is introduced in the knitting operation.

2. Increasing the size of the yarn decreases the potential length shrinkage but increases the potential width shrinkage. Increasing the size of the yarn also produces a wider and heavier fabric.

Condensed for easy reading from Textile Series Report No. 57, Office of Quartermaster General, Military Planning Division, Research and Development Branch.

3. For equivalent constructions and yarn sizes, little difference is found in the shrinkage behavior of yarns made under different manufacturing conditions.

4. Increasing the knitting stiffness or courses per inch decreases the potential length shrinkage but increases width shrinkage.

5. For the range of yarns and fabrics studied in this survey, there seems to be little difference in the shrinkage behavior of one-by-one rib and plain-knit fabrics, provided there is an equivalence with respect to needles per inch, size of yarn, and courses per inch.

With respect to finishing factors it was found that:

1. Wet finishing and conventional drying produces a fabric having less potential length shrinkage than the gray fabric.

2. Practically all the potential width shrinkage of knit fabrics is removed during the wet-finishing process.

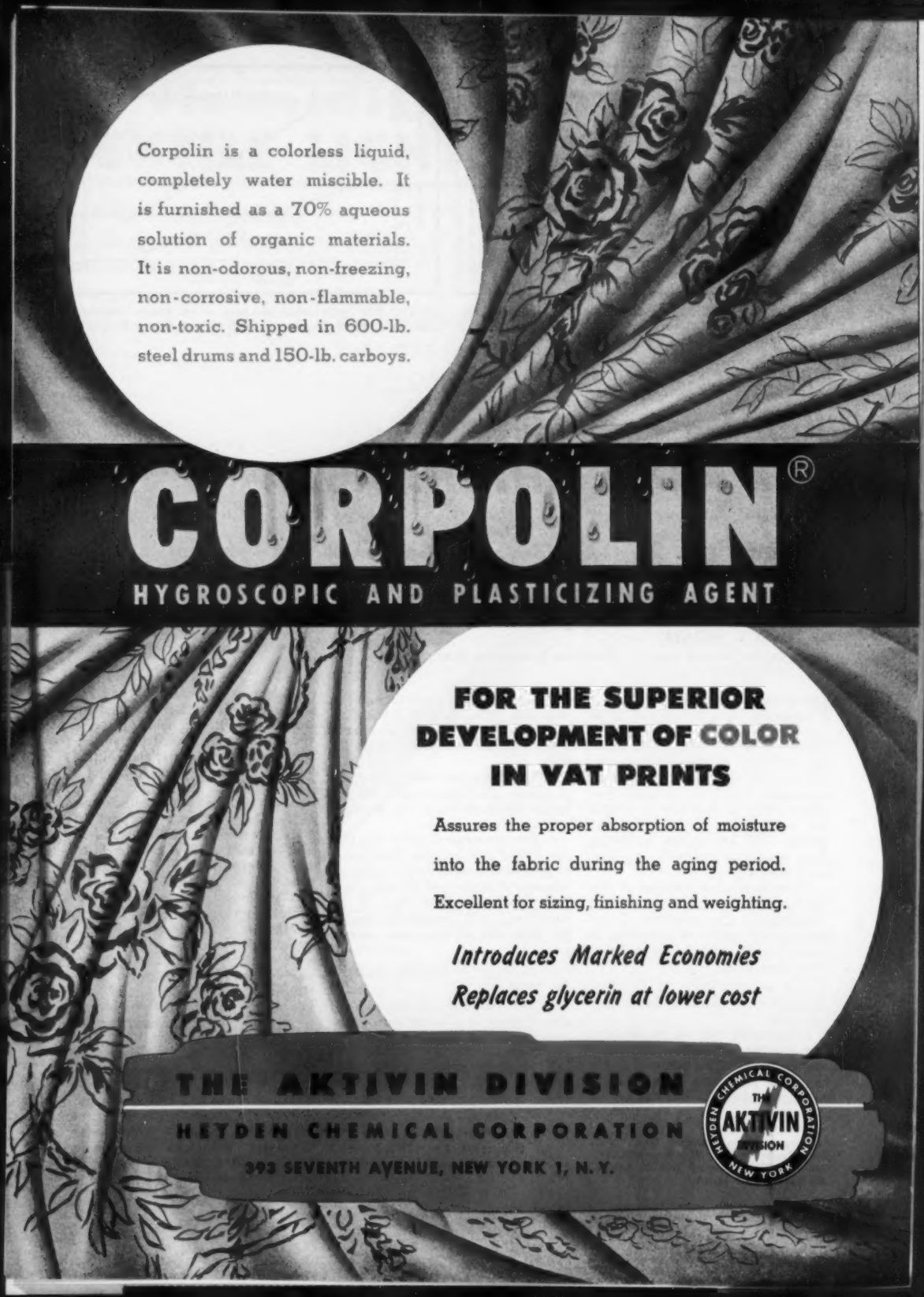
3. The benefits in length shrinkage gained by proper utilization of machine gage, yarn size, and knitting stiffness are maintained in the finished fabric.

4. Calendering may either increase or decrease the potential shrinkage, depending upon the choice of frames used. Increasing the width of the frames increases the potential width shrinkage and decreases the length shrinkage.

TESTS. The Quartermaster Depot tests were made on both rib and flat-knit fabrics. The machines used for making the flat-knit fabrics were of the Crane spring-needle type. In testing the effect of yarn size and knitting stiffness, a six-feed machine having a 17-in. cylinder fitted with 40-gage needles, 20 needles to the inch, was used. The rib fabrics were knit on Wildman machines. A 12-cut, 12-feed machine with a 17-in. cylinder fitted with 36-gage needles was used for most of the experiments.

Tests showed that dimensional stability of woven fabrics is related to tightness of weave, since fabrics well packed with warp and filling yarns were subject to less shrinkage than those of more open structures. Similarly, the length shrinkage of knit fabrics was less severe when coarser yarns, which are considered heavy for the gage of the machine, were used. This effect is shown graphically in Fig. 1. As the yarn count is decreased from 30s to 20s, the resultant length shrinkage of the knit fabric decreases.

As is also shown in Fig. 1, use of heavier yarns results in greater width shrinkages. With the heavier yarn (20s), length shrinkage is at a minimum, width shrinkage at a maximum,


Corpolin is a colorless liquid, completely water miscible. It is furnished as a 70% aqueous solution of organic materials. It is non-odorous, non-freezing, non-corrosive, non-flammable, non-toxic. Shipped in 600-lb. steel drums and 150-lb. carboys.
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and the two are quite close numerically.

It would appear that increased shrinkage in one direction would negate that in the other. Such is not the case. As shown later, potential width shrinkage is eliminated during subsequent wet-finishing operations. In addition, calendering may adjust fabric width without increasing the potential length shrinkage. Thus the dimensional stability achieved through tightening the fabric structure by using heavier yarns persists throughout the balance of the finishing process and on to the finished fabric.

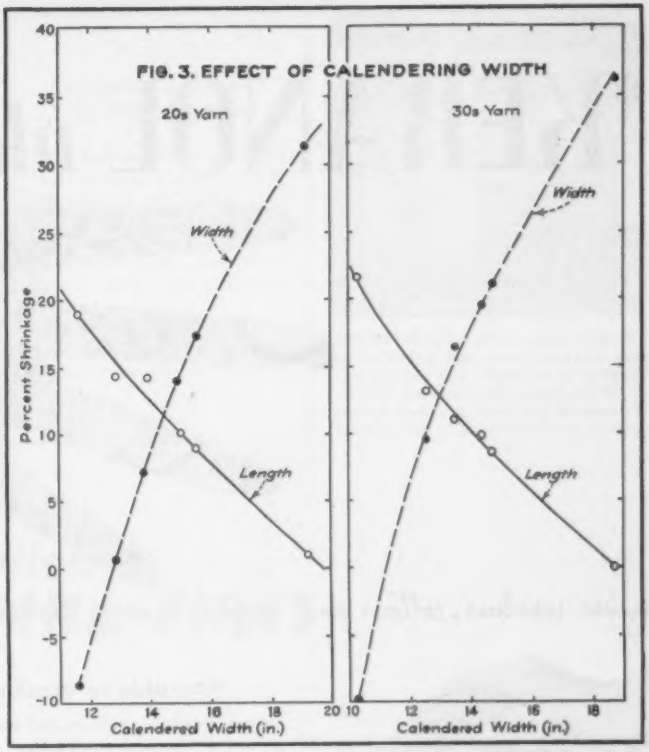
OTHER FACTORS. It is recognized that factors in yarn manufacture such as twist and staple length may have significant effect on the relaxation shrinkage of a resultant fabric. On the whole, however, it appears that normal yarn manufacturing, within the range of yarns studied, has less bearing on shrinkage than knitting structure.

Tests of fabrics with different knitting stiffness showed that those with the greater number of courses per inch were subject to less length shrinkage in laundering (Fig. 2), but to more width shrinkage. For a given degree of improvement in laundering stability, increasing the number of courses per inch results in much less change in the width and weight of the fabric than increasing the size of the yarn.

It is difficult to make a positive comparison between stitch types with regard to their effect on laundering shrinkage because of the multiplicity of factors involved. The two most common types of stitches used in Quartermaster underwear are the flat or plain stitch and the one-by-one rib. A realistic basis for comparison between these two types does not exist because, in addition to their basic geometric differences, the rib stitch is made with latch needles and the plain stitch is usually made with spring needles.

WET FINISHING. It is commonly accepted that a major portion of the potential shrinkage-producing strains are introduced during the scouring, bleaching, and drying processes to which underwear tubing is subjected. This hypothesis is not consistent with the results of the present study. For both the plain and rib-knit fabrics, a significant reduction in length and width of the tubing occurred during the wet-finishing and drying operations and resulted in a fabric which before calendering exhibited less potential shrinkage than the gray goods. Wet finishing when considered in conjunc-

(Continued on page 226)



CONTROL OF SHRINKAGE in rib fabrics in either width or length (not both simultaneously) is possible, as is shown by these test results plotted for length and width shrinkage for two yarn counts.

Table I. FRAME COMBINATIONS

Sample	Frame Width (In.)		Finished Width of Fabric (In.) After Conditioning
	Front	Back	
20/1 Yarn			
1	11.0	11.0	11.7
2	14.5	14.0	12.9
3	16.5*	15.0*	13.9
4	18.5	16.5	15.0
5	20.5	17.5	15.6
6	27.0	24.0	19.1
30/1 Yarn			
1	10.0	10.0	10.3
2	15.0	14.0	12.6
3	17.5*	15.0*	13.5
4	19.0	16.0	14.4
5	20.5	17.0	14.7
6	27.0	23.0	18.7

* These were considered to be the normal frame combinations for the constructions specified.

FRAME COMBINATIONS on calender can be varied to obtain proper finished widths in fabric, and to effect some control over later shrinkage.

*KERANOL *nk*

gives woolens, cottons and rayons a very desireable, soft full hand...

***Durable to Washing and Dry Cleaning**

Your woolen, cotton and rayon fabrics finished with KERANOL N K will have a truly mellow, glove-like hand, durable to washing and dry cleaning. KERANOL N K is unaffected by variable pH values, so may be used with greatest efficiency in neutral, alkaline or acid baths.

Mail the coupon for further information.

Additional – and highly valuable – use of KERANOL N K: as a plasticizer and softener in conjunction with all types of resin finishes.

EXCELLENT RESISTANCE TO YELLOWING!

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CITY_____ **STATE**_____

2-3-1

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MANUFACTURERS OF INDUSTRIAL CHEMICALS FOR OVER 45 YEARS
NEWARK, NEW JERSEY

MAINTENANCE of this motor running 24 hr. a day includes insertion of grease at top of bearing, elimination of outside grease and dirt, and marking of tag when job is finished. Regular care pays big dividends in savings on equipment, shut downs, and maintenance.

Lubrication Suggestion for Mill Operators

1. Tag every grease fitting with the type of grease used and the most recent lubrication date.

2. Give the operating engineer or a responsible employee a chart showing the cycles for the various installations.

3. Have him check all installations regularly to see that the greasing cycles are being observed.

PROPER TAGGING of the pump motor includes date of most recent lubrication and type of grease used. Tagging is an excellent manifestation of good lubrication practice in any mill because it shows that management is keeping tabs on both costs and fire hazards.

Proper Lubrication Can Prevent MILL FIRES

- *Lubrication cycles must be accurately observed*
- *Immediate fire cause is often an overheated bearing, not lint or fly*
- *Lubrication job too often is that of least skilled worker in the mill*
- *Regular maintenance program with approved greases is best safeguard*

By VIRGINIA CHRISTIANSEN

TWO MAJOR CAUSES of textile fires are improper lubrication and improper lubrication maintenance of electric motors, each an individual problem.

Fortunately, these faulty procedures are easily corrected. The selection of the right lubricant for the job is the first step; then, second, this lubricant must be applied properly and according to schedules of maintenance. The finest greases in the world cannot give protection unless lubrication cycles are accurately observed.

The immediate cause of many textile mill fires is the overheating of motor bearings, with resultant combustion of highly inflammable lint, dust, and fly that collect around the housing. Mill operators generally recognize this situation as a fire and efficiency hazard, yet their approach to correcting it is often in the wrong direction. Thousands of dollars are spent for air conditioners, cleaning systems, and similar devices to help control the lint and fly. These, however, do nothing for bearings that produce the original spark. As a matter of fact, chances are that if the lint had not ignited, the overheated bearing would soon have broken down anyway.

CASE HISTORY. On a recent inspection of a textile mill, a lubrication engineer pointed out 64 potential fire hazards to the superintendent. In two or three instances, the motor bearings were running so hot the men could not lay their hands on the housings. A check-up showed that the proper grease had been used on the motors, but that no records had been kept of the frequency of lubrication. From appearances, it was evident that some motors had not been lubricated for many months.

This particular superintendent did something about the situation at once: All bearings were flushed and a regular lubrication cycle installed. Since the plant had had a minor fire shortly prior to this time, the superintendent was well aware of the desirability of eliminating the fire hazard.

While an overheated motor isn't always responsible for fires, it is always a potential starter of fire. More-

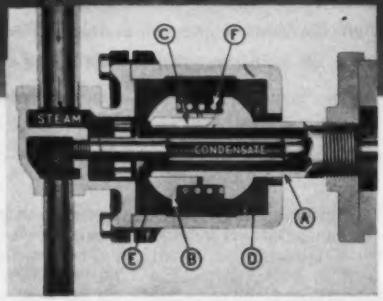
(Continued on page 212)

The Textile Industry's Recent Fire Record

"About 80% of the nation's textile industry is playing with fire—and last year more than 4,000 of them lost the gamble!" Howard W. Rowles, vice president of Master Lubricants Co., Philadelphia, Pa., stated recently in a report.

Quoting figures released by the Fire Protection Institute, New York, Mr. Rowles pointed out that there were more than 4,000 textile fires reported in the United States during the year 1949. These were only the recorded fires. Fires extinguished without outside aid were not counted, though these too undoubtedly represent a considerable figure and must have resulted in serious production delays and expense.

Johnson Joints installed on large dry cans at Indianapolis Bleachery Co., Indianapolis, Ind. Cross-section view below explains their cost-cutting, production-boosting operation.



Add up all the shortcomings of ordinary stuffing boxes — the endless repacking, oiling and adjusting; the efficiency-drop and rapid wear that comes with misalignment. It comes to quite a lot of trouble and expense.

All these troubles are gone in the installation pictured here. No wonder the line-up of Johnson Joints stretches clear through the textile industry. The men who make textile machines, like the mill men who operate them, agree almost unanimously that any dry can, sanforizer or slasher is better machinery with Johnson Joints.

Here is one step you can take which will definitely stretch production and personnel, yet pays its cost out of savings in maintenance alone.

Sizes and styles for every need: write for catalog.

Get *all* these savings — *only* in Johnson Joints

- **Completely Packless**—Rotating nipple (A) and collar (B) are keyed together (C), but fit loosely so pressure can fill housing, press seal ring (D) against nipple.
- **Self-Lubricating**—Seal ring (D) and bearing ring (E) are of long-lived carbon graphite, need no lubrication.
- **Self-Adjusting**—Spring (F) is for initial seating only. In operation, the higher the pressure the tighter the seal.
- **Self-Aligning**—Note room for lateral movement of rotating assembly, spherical seating for angular movement.

Products of The Johnson Corporation

814 Wood Street, Three Rivers, Michigan

Rotary Pressure Joints • Compressed Air Separators and Aftercoolers
Direct Operated Solenoid Valves • "Instant" Steam Water Heaters

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COMPILED BY
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New York Editor, TEXTILE WORLD

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▶Back in August, 1950, TEXTILE WORLD published a post-war bibliography of textile books that has proved to be of both technical and general interest to many readers both here and abroad.

▶Because of incomplete returns at that time to our inquiries on textile books published in English since World War II, the notation was made in August that a revision of the bibliography would be available as soon as returns stopped coming in and final results could be set down and reprinted alphabetically by grouping.

▶The original textile bibliography has now been worked over—with additions, deletions, and corrections made as indicated by many interested readers and publishers. We thank many of our readers for your patience during the period of revision.

▶To help cover reprint and mailing costs, readers are requested to enclose 25¢ per copy (15¢ per copy for quantities of 20 or more) with their order for the newer and more up-to-date bibliography. All those who were interested enough to participate in the compilation and revision are being sent a complimentary copy of the reworked bibliography.

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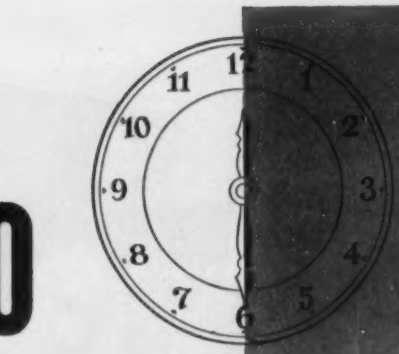
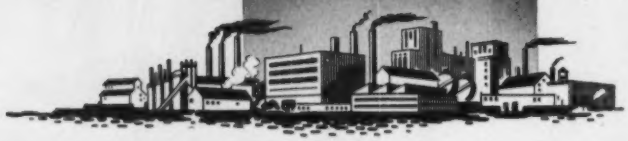
...for the half-hour that wasn't there





WHEN a Massachusetts company* surveyed their plant methods, they were amazed to find how much it was actually costing them to keep their machinery lubricated.

The lubrication cost was $14 every day. Added to that was the cost of the half-hour's production time lost every day while the machinery was stopped for lubrication.

This manufacturer called in an Alemite Lubrication Engineer. He recommended a system that *automatically* lubricated all the machinery . . . while it was running! The result: the lost half-hour was converted to productive time and the cost of lubrication was cut from $14 a day to only 21c a day. The total savings are over $3,000 every year.

Call Your Alemite Lubrication Engineer

No matter what size or type of plant you operate, Alemite can show you dozens of ways to save through the more efficient handling of petroleum products. Call your local Alemite Industrial Distributor now or send for the free booklet "11 Ways to Cut Production Costs." Simply attach the coupon below to your letterhead. Dept. J-31, 1850 Diversey Parkway, Chicago 14, Ill. *Name on request

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1. In transferring lubricants . . . cuts man hours 63% for every 100 pounds transferred. Eliminates mess, costly contamination.

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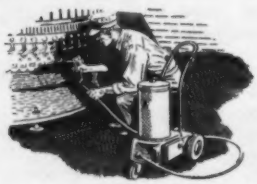

3. In applying lubricants . . . saves up to 23.9 man hours for every 100 pounds of lubricant applied to bearings.

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(Simply attach to your letterhead)

ALEMITE, Dept. J-31
1850 Diversey Parkway, Chicago 14, Ill.

We'll include facts on the new Alemite Oil-Mist System, too—(OIL-MIST atomizes oil into mist, circulates it to bearings under pressure. Increases life of bearings as much as 17½ times).

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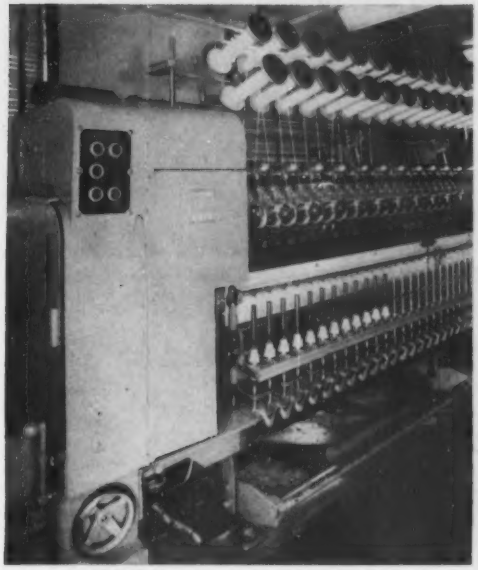
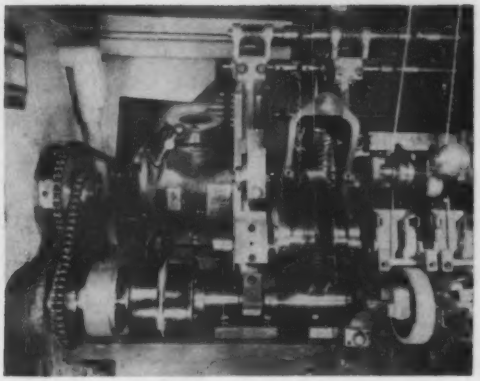
TEXTILE Equipment NEWS



IMPROVED McGLYNN HAYS FRAME with Ambler Superdraft system has many new features designed around the drafting elements. Conversion units of Ambler system are available for all existing frames.



NO DRAFT-CHANGE GEARS! To change the draft in the improved frame with Ambler Superdraft, simply turn the crank on a variable-speed motor geared to the front roll.

Ambler Superdraft System Available in U. S. From McGlynn Hays

Availability of the British-developed Ambler Superdraft system on new frames or as conversion units for existing frames of any make has been announced by McGlynn Hays Industries, Inc., Belleville, N. J., U. S. licensees. Close association for over a year with Ambler Superdraft Ltd. in preparing the introduction of the Ambler system to American mills has enabled McGlynn Hays Industries to take full advantage of years of research in drafting spent by the Ambler group, according to the company. Initial steps in the application of the new fiber-control system have been made on a slow and conservative basis.

Operation of the Ambler system has now been so simplified and standardized that its use in general mill operation is said to be entirely practical. It is possible to make proper adjustments for various qualities of stock and drafts by reference to standard charts based on accumulated experience. As a result, the operation and adjustment of the system requires no greater knowledge or skill than that required with regular conventional-type spinning.

The ability claimed for the system to produce top-quality yarns at extraordinarily high drafts offers several advantages. The most costly drawing and roving operations are eliminated; thus the amount of preparatory spindlage is reduced to $\frac{1}{4}$th of that required for preparation on the conventional system.

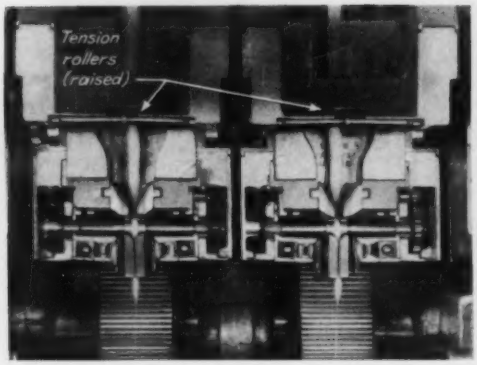
Furthermore, it is possible to spin all yarns of a given quality from a single weight of roving, a feature which eliminates the problem of making and stocking a variety of roving weights. The flexibility of the operation is also greatly increased, and the necessity of frequent breakouts and recreeling in changing yarn counts is eliminated.

Application of the Ambler system, either to new spinning equipment or to existing machines on a conversion basis, provides a completely flexible spinning unit. By virtue of the wide range of adjustments provided, it is possible to spin the widest range of fibers on the same machine. Coarse wools, mohair, and long-staple synthetics and blends, as well as the finest quality of wool and short-staple synthetics, may be spun on the same machine.

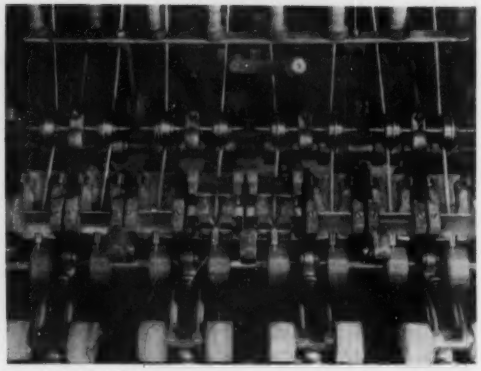
Even cotton has been spun on a conventional worsted frame equipped with the Ambler system. In one test, 40s cotton yarn was spun from 1-in. cotton with a 3-in. bottom roll and a $3\frac{1}{2}$-in. top roll, and a draft of 110.

By specifically designing the Ambler system as a component part of the McGlynn Hays machine, it has been possible to incorporate several outstanding features and improvements.

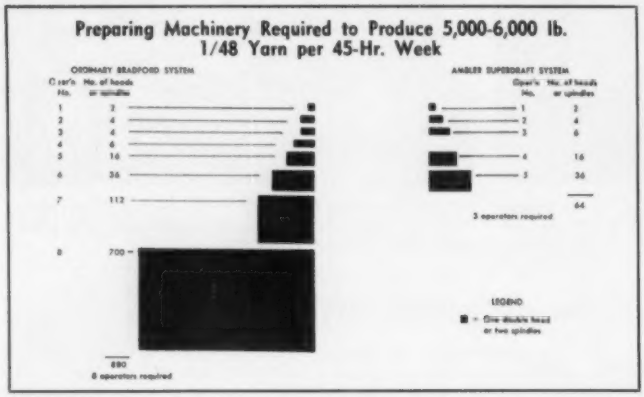
The improved machine is designed to provide unlimited draft settings from a draft of 20 to 200. Change of draft is obtained by merely setting a dial on a variable-speed motor geared to the front rolls. No change of draft gearing is required. The position of the Ambler Superdraft unit with respect to the front-roll nip is readily adjusted to meet varying requirements of draft and stock by a crank, so that all units are moved uniformly. Change of ratch setting of the special back roll



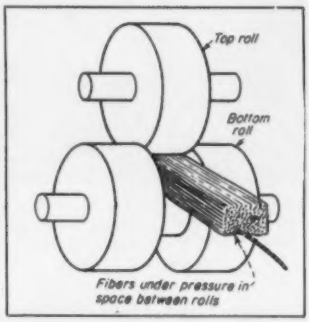
***INTER-FIBER PRESSURE** is exerted by back rolls (not shown here) and by tension rolls behind front roll shown here. (Tension roller raised). Twist is maintained to within ½-in. of front rolls. (Top front roll removed here).*



***CLOSE-UP OF AMBLER SYSTEM** shows drafting elements spinning 105s worsted. Back-roll pressure is 6 to 10 lb. Ratch setting is 1½-in. larger than longest fiber. Top pressure rollers are removed from elements in center.*



***MACHINERY, LABOR, AND FLOOR SPACE SAVINGS** obtained by use of Ambler Superdraft are shown in this comparative chart of a conventional Bradford organization and an Ambler-system organization.*



***SECRET OF AMBLER SYSTEM** is maintaining twist in roving in drafting areas by not flattening roving between rolls. Fibers are held under pressure in rectangular area between rolls that do not touch. Control of each fiber is exerted by inter-fiber pressure of surrounding fibers.*

is obtained in a like, easy manner.

The conversion unit available for existing frame is flexible and may be applied to practically any type of spinning frame. In addition to the Ambler unit and base-bar assembly with its adjustable elevating mechanism and unit-driving mechanism, the conversion includes modification of the existing back-roll assembly. Generally, the existing bottom front roll may be used. If it is not in good condition, refluting may be necessary. Improved top front rolls with special supporting brackets and pressure mechanism are furnished.

In view of the newly created demand for synthetic and wool products and the comparatively limited production facilities available for processing long-staple fibers (less than two million of the 30 million spindles in place in the U.S.), introduction of the Ambler system is being rapidly accelerated. The necessity of providing additional facilities in the U.S. capable of handling long-staple synthetics and synthetic blends to meet requirements can be met by the application of the Ambler system to existing American equipment, the company states.

The conversion of the existing long-staple spindles to Ambler Superdraft can effect a substantial saving in manpower through the elimination of a number of labor-consuming preliminary processing operations which are unnecessary with the Ambler system. At the same time, the system will produce a better-quality product than is now possible on existing long-staple spindles. Strength of yarns produced on the Ambler system is said to be increased 10% over similar yarn produced on conventional systems.

The Ambler Superdraft system has been proved to be commercially practical in England. Courtauld's Ltd., British producer of synthetics, have made exhaustive tests of the new principles embodied in Ambler Superdraft, and as a result are now converting extensive portions of their spinning facilities to the Ambler system. Many other British mills, including Patons & Baldwins Ltd.; Downs, Coulter & Co. (Canada) Ltd.; Reuben Gaunt & Sons Ltd.; Fred Ambler Ltd.; and W. & J. Whitehead Ltd.; are also making large-scale applications of the Ambler system to their existing equipment.

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Sonoco's PLASTAVON

FILTER SLEEVE

for use with the

DYTEX® TUBE

Here, at last, is a superior filter for package dyeing—designed to give you clean, even, "clear-through" penetration.

For use with SONOCO'S disposable Dytex Tube, the Plastavon Sleeve affords maximum protection against objectionable or discoloring matter; acts as a "cushion" to reduce the velocity and distribute the flow of the dye liquor; is highly absorbent and allows the dye to spread out and penetrate all the yarn next to the tube.

In addition, it helps to reduce slippage in the primary winding.

FOR ONE-TIME USE

Standard Sizes

⅝" I. D.—6¼" long
1⅛" I. D. with varying lengths

Special Sizes also available

For further information, contact your SONOCO representative or write direct to the nearest office.

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Knitting Arts Exhibition
Atlantic City, New Jersey
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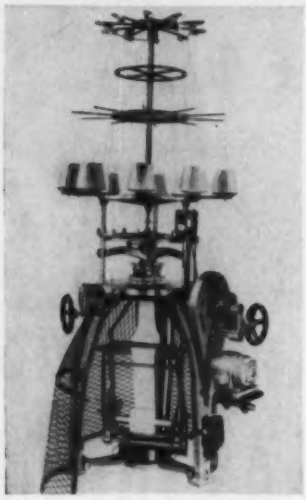
DEPENDABLE SOURCE OF SUPPLY

Supreme Rib-Cloth Machine Has New Design Features



MODEL-SR RIB-CLOTH MACHINE, to be unveiled at Atlantic City Show next month, is of simplified yet more versatile construction.

A new line of rib-cloth knitting machines is being introduced by Supreme Knitting Machine Co., 105 Johnson Ave., Brooklyn, N. Y. This machine produces quality rib cloth at high output rates, and is said to be an important step forward in rib-cloth production.

The new machine is designated Model SR, and will be officially unveiled at the Knitting Arts Exhibition in Atlantic City, April 30th to May 4th.

The production rate for all sizes of Supreme's Model SR is approximately 32 yd. per hr. at 100% efficiency.

Some of the design and construction features of the new Supreme ribber Model SR are:

1. A single action, micromatic, dial-elevating and lowering adjustment designed to give knitter:
   a) Accurate and uniform stitch adjustment by turning a knob with the hand. The knitter can knit as tight or loose a stitch as desired.
   b) Greater space between knitting feeds to allow quick and easy access to cloth and needles at knitting level for simple pick-up and cleaning.

2. Sturdy, dogless construction which eliminates pinch lines and insures positive alignment of all elements at all times.

3. A new and simple method for speedily converting from plain to swiss rib.

4. Simplified and instantaneous synchronization of dial to cylinder needles.

5. Individual, channeled cams of substantial thickness which lock needles in proper position at all times and eliminate possibilities of smash-ups. The knitter can remove a section for inspection and cleaning and replace it without manual realignment of the needles. The thickness of the cams provides a large bearing surface for long wear, permits easier cleaning, and assures less accumulation of dirt and lint.

6. The ability to knit a wide range and variety of yarns from extremely coarse to extremely fine with uniform quality and with a minimum of adjustments. Weak or slubbed yarns will not cause damages or interrupt production.

7. An ability to produce cloth of high elasticity. The cloth construction is said to assure better shape retention after processing and subsequent washings.

8. Sturdy construction. Strong tripod construction is used throughout machine. Particular features, for example, include a rugged cylinder and dial.

9. Large open areas around cylinder and dial for easy cleaning, inspection, and maintenance.

10. Automatic control which insures uniform cloth-roll size. Machine stops automatically when a predetermined roll size is completed.

11. Roller-bearing thrust for entire center drive. Overhead, gear-driven dial with center spindle of special-alloy steel, hardened and ground for long wear and trouble-free operation.

In addition to the features mentioned above, the new Supreme ribber incorporates many of the basic Supreme design principles. These features include:

A stationary yarn stand which permits higher speeds for the cylinder, dial, and knitting elements, and lets the knitter use the double-cone system with "pig-tail" double tie-ups.

A revolving, floating take-up and roll-up which is interwinding and roller-bearing supported. Uniform tension assures large, even, and compact cloth rolls. Independent support prevents wear on cylinder and outer ring.

Unit motor drive—a rugged, smooth-running drive. A patented multi-disk clutch gives almost instant start and stop without slippage. The smooth, silent-chain drive is unaffected by lint or dust.

The Supreme Model SR will be available in the following sizes:

7″—10 feeds	17″—24 feeds
8″—12 feeds	18″—26 feeds
9″—12 feeds	19″—28 feeds
10″—14 feeds	20″—30 feeds
11″—16 feeds	21″—30 feeds
12″—18 feeds	22″—32 feeds
13″—18 feeds	23″—34 feeds
14″—20 feeds	24″—36 feeds
15″—22 feeds	26″—38 feeds
16″—24 feeds	28″—42 feeds
	30″—44 feeds

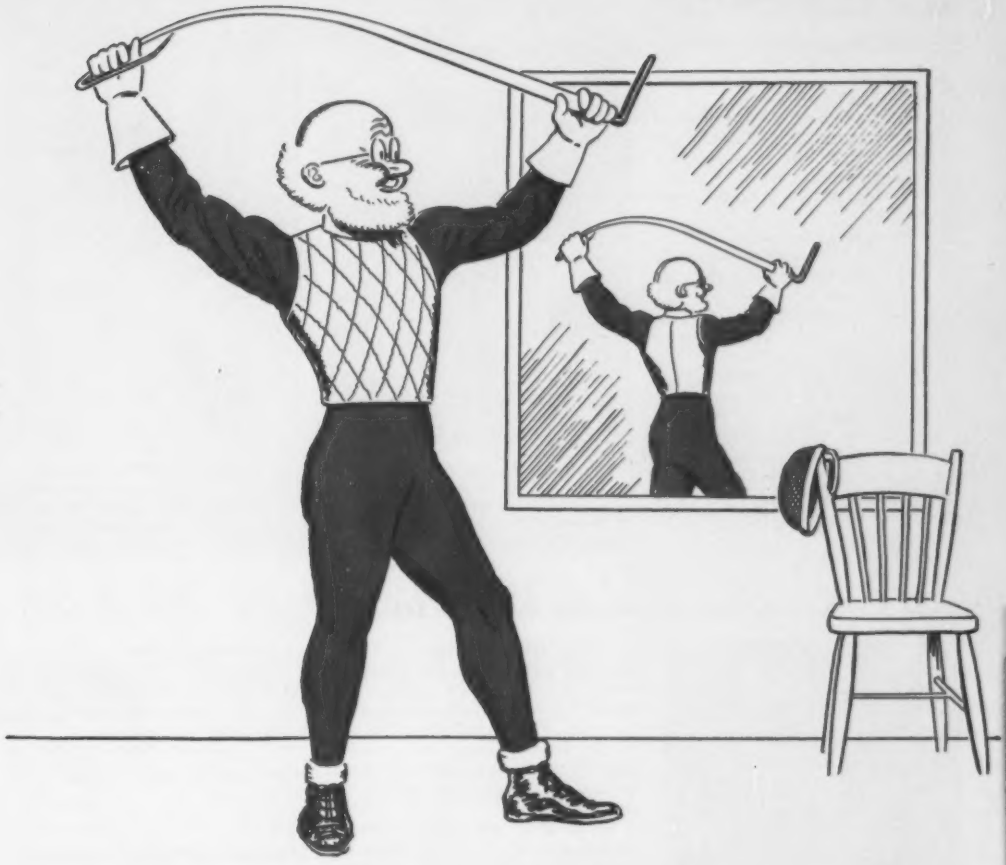
Two-for-One Twisting Spindle Adaptable to Crepe Up-Twisters

A new 2-for-1 spindle said to be adaptable to practically every make of up-twister for making crepe has been developed by C. Landolt & Co., Aurorastrasse 84, Zurich 7/32, Switzerland. Use of the spindle is said to double machine output without increasing yarn tension. Larger delivery bobbins are also used, but power requirements are reduced.

The principle of double twisting consists of imparting two turns of twist for each revolution of the spindle. The delivery bobbin is stationary; only a small part of the spindle revolves at the given high speeds. The spindles are built to suit bobbins already in use, unless preference is given to larger ones. Larger bobbins may be used without hesitation, it is claimed, even on comparatively light machinery, as the delivery bobbin is stationary.

From the yarn-unwinding device, yarn is led up to the inlet eye, down through the center of the bobbin, and to the outside of the spindle. On the outside of the spindle the yarn forms a steady twisting balloon and is said to maintain constant tension on the yarn from the moment the yarn begins to unwind from the full bobbin until the spool is empty.

These spindles have been designed so that they hold bobbins taking 1 lb. of silk, or even a little more, without demanding a pitch of more than 5½ in. In spite of using these large bobbins, power requirements are reduced. It is not necessary to change to bigger take-up bobbins when using these large delivery bobbins, as exchange of the take-up bobbins is done quickly, easily, and



Unusual Flexibility

In a fencing foil . . . or a Spring-Beard Needle, flexibility is essential.

Textile Spring-Beard Needles provide a unique combination of strength and flexibility. Every dimension—length, width, thickness, taper—is carefully calculated in direct relation to the resiliency of the steel and the job the needle must do.

Flexibility is another of the many advantages obtained through Textile's quality controls—automatic and electronic—which constantly check each stage of production. You'll see the difference in better fabrics, increased profits.

TEXTILE MACHINE WORKS, READING, PENNA.

Textile
SPRING-BEARD NEEDLES
For Full Fashioned and Warp Knitting

For more information, write direct or use Reader Service post card.

without having to stop the revolving spindle.

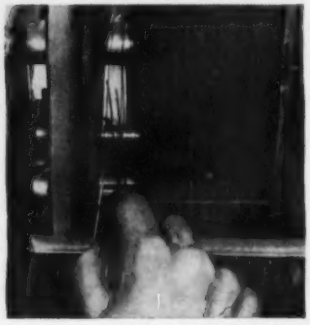
The double-twist spindle has these other advantages:

1. As the bobbin no longer rotates, and the yarn running off does not touch the flanges, the most primitive spools may be used. Spools need not be equalized nor be provided with special flanges.
2. The work of the twister operator is easier, as the stationary yarn-unwinding device signals breakage of the yarn or an empty bobbin.
3. With this novel spindle it is possible to twist cotton, wool, schappe silk, staple fiber, and linen on uptwisters which hitherto could only be used for silk, artificial silk, or wholly synthetic material.
4. Machines that have been in use for a long time, and that were, through the steady increase of revolving speed and size of the bobbins, almost obsolete, again run smoothly and at high production rates.

YARN PASSES from an unwinding device similar in operation to a conventional flyer down through the center of the bobbin to the outside of the spindle where a twisting balloon holds tension constant.

THE SPINDLE is quickly and easily disassembled for changing delivery packages. Larger bobbins may be used on the spindle, as only the flyer and a small part of the spindle revolve.

WIRA Reaching-In Machine Adapted to Cotton Warps



ENDS FROM THIS COTTON WARP are presented for drawing in as rapidly as the operator can pull them through.

The first installation in a Lancashire cotton mill of the automatic reaching-in machine developed by Wool Industries Research Assn. of England is said to be operating successfully. The machine is sold by Muschamp Taylor Ltd., Pollard St., Manchester, England.

The machine is, in the opinion of the management of the mill, thoroughly satisfactory in performance on leased cotton warps and is proving especially useful in the training of inexperienced operatives. This factor is, of course, significant at the present time when labor is becoming increasingly difficult to obtain.

The new machine is capable of dealing with most counts and qualities of plain and fancy spun-rayon and cotton yarns with a minimum of settings and adjustments. Once installed and adjusted, few further adjustments need be made, it is claimed, other than the setting of the revolving brushes which tension the warp during the actual process of selecting the end to be drawn.

Simple in general design, the machine comprises a frame for mounting the warp, heddles, reed, etc. A traveling carriage or selector unit is mounted on a runway extending along the full length of the frame and immediately behind the drawing-in position at the heddle shafts.

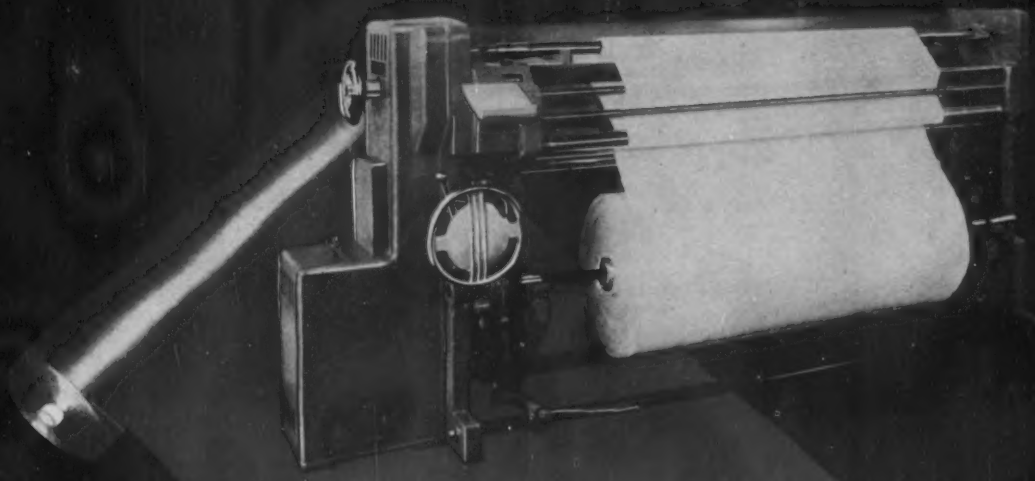
The selection of warp ends by the selector unit is carried out by a picking-out finger which oscillates between top- and bottom-center positions, describing a semicircle backwards and forwards. At each stroke, one end is transferred from the end-and-end leases located by lease bars. The end, or ends, selected by the picking finger are automatically transferred by the movement of the finger to the hooked projection of a rotary and cylindrically shaped storage magazine which, as it rotates, controls the ends by means of a spiral groove and spaces them out at convenient intervals for the operative. A light bulb is mounted behind a translucent screen to assist the operative in taking the end.

The speed at which the end-selector mechanism works is automatically that of the operative. The faster the operative works, the faster the ends are presented for drawing. Similarly, if for any reason the operative has to suspend work temporarily, the machine will remain stationary awaiting the drawing of the next end.

The machine is made in sizes to accommodate a warp width up to 100 in.

Molded Fiberglas Bobbin Boxes Will Not Snag Yarn

MOLDED-FIBERGLAS BOBBIN BOXES that have no rivets, screws, bolts, or wooden reinforcements have been developed by Westport Fibre Corp., Westport, Mass. These bobbin boxes are of sturdy, one-piece, molded construction with a smooth inside finish, and rounded inside corners. Boxes are permanently colored. In spite of the high strength, the boxes are said to be the lightest on the market. Boxes are available in five standard sizes and can be supplied for self-stacking or nesting.



The VAN VLAANDEREN
Constant Cloth Speed TUBER
A Smooth Performer

Most modern fabrics benefit by tensionless processing in the wet stage. Control of tension when *tubing* also has definite advantages, giving a better package, accurately measured.

CONSTANT CLOTH SPEED up to 200 yards per minute is possible, under controlled tension from near tensionless to medium tension. Package density is uniform as predetermined.

ACCURATE MEASURING is given at all times, since tension between let-off and take-up can be reduced to the minimum, as the measuring drum is a driven unit of the machine. Measuring roll is non-corrosive with a long-wearing finish and mounted on a moveable carriage for easy selvage alignment.

THE V. V. CONSTANT CLOTH SPEED TUBER is easily and quickly loaded. Start, let-off, take-up and measuring drum are all synchronously controlled by one foot pedal. Stop brake is controlled by hand lever.

Ask to see this machine in operation.

The machine illustrated is also available with conventional, variable cloth speed for those who do not require the tensionless feature. Improved from time to time to meet increasingly exacting requirements, this machine has consistently given superior packaging performance.

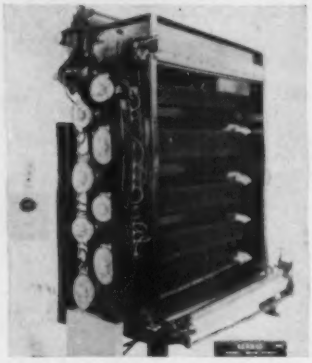
VAN VLAANDEREN
MACHINE COMPANY

370 Straight Street • Paterson 3, New Jersey

Cable address: Vlaanderen, Patersonnj, U.S.A.

World's largest manufacturer of machinery for processing modern fabrics

Motorized Brush Has Split-Second Brake



AN ELECTRIC BRAKE on each motor driving the brushes stops brushes almost instantly, preventing piled-up goods between brush and shear.

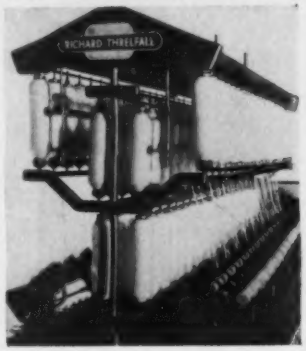
A new element in the design of the latest brushing machine made by Hermas Machine Co., Warburton Ave., Hawthorne, N. J., is a Warner electric-brake system designed to assure instant and simultaneous stopping of all the brush rolls together, as well as simultaneous stopping of the Hermas shear.

The brushes revolve at speeds up to 1,000 rpm. Any irregularity in the simultaneous stopping may result in piled up goods between brush and shear, or cloth wound into the brush rolls and abraded cloth.

The Warner electric-brake system is applied to the separate brush rolls, each of which has its own motor. Control of the entire system is by the stop button on the shear. Click that button off, and the brush and shear are stopped simultaneously in a fraction of a second, with no coasting of the brush, the manufacturer states.

This latest-model brushing machine has features such as variable brush pressures on the cloth, drive and all operating parts inside a housing, a powerful suction system to remove dust and trash, nylon-bristled Metlkor brushes, and other features, either as standard or optional equipment, as may be needed.

British Frame Has New Creel, Cylinder



A NEW CREEL designed to prevent accumulation of lint and for easy accessibility is one feature of a new spinning frame developed by Richard Threlfall Ltd., Bolton, England. The creel is available separately. Another feature of the frame is a cylinder made of a bonded-fiber laminate which is said to run more quietly than a conventional sheet-metal cylinder

Single-Spindle Winder Designed for Knitting Mills

A SLOW-START DRIVE on this single-spindle winder reduces the danger of end breakages in starting up.

A new single-spindle winder, specially developed for those hosiery manufacturers whose production of half-hose is not sufficiently large to justify the use of a full-size bobbin winder, has been introduced by Muschamp Taylor Ltd., and is available through Foster Machine Co., Westfield, Mass.

The machine is self-contained and is mounted on a base board which can be fixed to any workbench. The unit consists of an orthodox single-spindle winding head with conventional disk build. The spindle is driven by a 1/6-hp. electric motor mounted on the same base board and operating through a conventional pushbutton starter.

One feature of the winder is the slow-start drive which reduces the danger of end breakages on starting up.

A simple creel to take any type of yarn package is fitted, the yarn being taken over-end from the package through a disk tension to the spindle.

Power consumption is low, and the self-contained design of the machine makes it possible to move it without difficulty from one part of the factory to another.

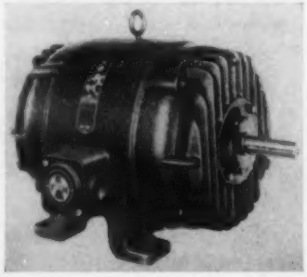
The winder can be supplied with a stand if required.

Enclosed Squirrel-Cage Induction-Motor Line Expanded

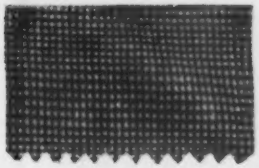
The line of type QZE, totally enclosed, non-ventilated, squirrel-cage, induction motors of Fairbanks, Morse & Co., Chicago 5, Ill., has been extended to include continuous-duty ratings built in NEMA standard frame 284. At present, 7½-hp., 1,800-rpm., and 5-hp., 1,200-rpm. motors are in production.

These motors conform in all respects to NEMA and ASA Standards for totally enclosed units, and are identical in mounting dimensions with standard totally enclosed, fan-cooled motors of the same ratings. They are suitable for service in adverse locations where dirt, dust, and lint are prevalent, since there are no ventilating openings to clog.

Rotors are Fairbanks-Morse "Copperspun" type. Ball bearings are of the cartridge type with ample grease space to permit sealing for the life of the bearing if desired, but with provisions for easy flushing and regreasing. Conduit boxes are the Fairbanks-Morse dual type, a valuable feature in areas where space is limited.



DIRT, LINT, AND DUST cannot enter these new motors as there are no ventilating openings.



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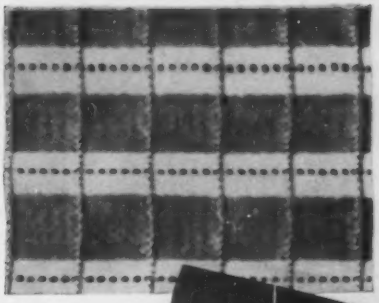
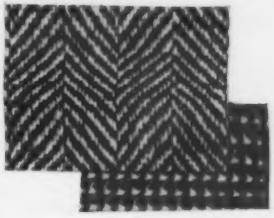
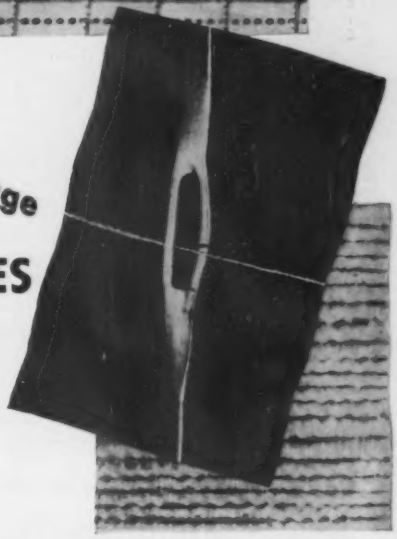


free chafless yarn flow—easy slub passage

with WALKER Superior HEDDLES





The Walker "Streamlined Eye" for cotton and rayons and the famous Walker wool eye for wool and worsted yarns gives you improved cloth quality, longer service and lower cost. Walker makes a complete line of flat heddles including 1/8 turn, 1/2 turn and full open eyes.

While each of these is designed to fill your special requirements, these features are common to all:

1. The warp eyes are cornerless at top and bottom—no oval or "V" shape—to give a broad flat base for warp travel.
2. The polishing of the eyes and shafts of all Walker Heddles is carried on to an unusual degree. Eyes are polished inside and out on machines especially designed for the purpose.
3. In addition to the customary quarter-turn of the heddle at the eye, the sides of Walker "Streamlined Eyes" are turned to a direction almost parallel to the warp ends. This gives additional highly polished surface rather than cut surface for warp to travel over, further reducing chafing and eye wear.
4. The streamlined shape of the Walker eye reduces yarn bumping to the very minimum as heddles come level and pass.

Write Walker, Dept. TW-3 today for your copy of the Walker Heddle Folder—describing in detail more of the advantages Walker Heddles give you.

WALKER

MANUFACTURING COMPANY, INC.
ATLANTIC & RUTH STS., PHILA. 34, PA.

HEDDLES • HEDDLE FRAMES • REEDS

Shuttle-Bonding Technique Gives Longer Shuttle Life

CURING TIME for glue used in bonding fiber to wood shuttles is reduced to 90 sec. by electronic dielectric heating.

Weaving shuttles, traditionally made of dogwood or persimmon wood for high impact strength and retention of smooth contours for long periods of continuous operation, are said to have longer life if surfaced on two or more sides. Surfacing is done with hard fiber sheet on electronic dielectric-heating equipment made by Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh 30, Pa.

Electronic dielectric-heating techniques have been adapted to shuttle bonding to improve the quality of the bond, reduce its cost, and increase production. Use of a radio-frequency generator for heating, plus an automatic hydraulic press which gives uniform pressure on both the straight and curved portions of the shuttle face, produces a uniform bond the length of the shuttle. The bond formed is said to withstand the hard impact of the picker stick as it drives the shuttle across the loom.

Previously used methods generally involve the use of a casein glue to coat both the fiber and wood surfaces on two opposite shuttle sides. The adhesive-coated fiber sheet and wood cores are placed in heavy steel clamps. End wedges are driven into the tightened clamps to bond the curved end portions, and the clamp assembly stored for perhaps 4 hr. at room temperature. This procedure allows the glue to set and cure before the additional machining operations can be performed. The entire process must be repeated if a third or fourth face is to be surfaced with the fiber.

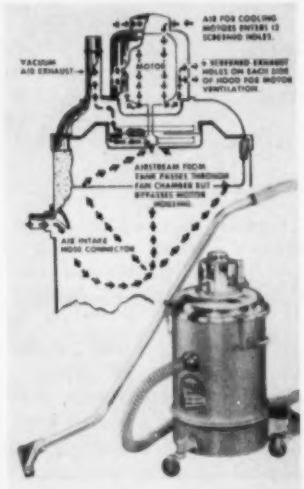
The new technique uses stray-field heating, with electrodes embedded in rubber on the surface of thick rubber dies. The glue line is heated to polymerize the thermosetting plastic glue used with the new process. A radio-frequency generator supplies the required dielectric heat at a frequency of approximately 13.6 megacycles per sec. A standard steel die set, used in a hydraulic arbor press, makes up the upper and lower platens on which are mounted the electrodes and rubber dies.

The final design incorporates solid rod-type electrodes running transverse to the shuttle. These rods are heavy enough not to bend over the edge of the shuttle when pressure is applied, yet flexible enough to conform to the contours of tapered shuttles. Completely enclosed by a special rubber mat made of pure gum rubber, they are then mounted on the rubber dies. This arrangement, plus use of wedges placed between the rubber dies and press platens to give uniform pressure on tapered ends, allows one set of electrodes and one press to bond all the hundreds of different sizes and shapes of shuttles manufactured.

The total curing time required is only 90 sec., compared to previous methods requiring perhaps 4 hr. or longer for thorough glue-setting. The time saving is actually greater than the 90 sec. indicate, since more than one shuttle can be bonded at the same time.

Glue savings of up to 75% have resulted, since the radio-frequency technique requires less glue.

Vacuum Handles Wet or Dry Dirt Without Adjustments


AIR FOR COOLING MOTOR ENTERS IN SCREENED HOLES
VACUUM AIR EXHAUST
MOTOR
6 SCREENED EXHAUST HOLES ON EACH SIDE OF HOOD FOR MOTOR VENTILATION
AIRSTREAM FROM TANK PASSES THROUGH FAN CHAMBER BUT BYPASSES MOTOR HOUSING
AIR INTAKE HOSE CONNECTION

A MOTOR-COOLING SYSTEM which does not depend on the vacuum air stream permits use of this vacuum cleaner for wet or dry pick-up without changes.

A new and portable heavy-duty vacuum machine has been developed by Hild Floor Machine Co., 740 Washington Blvd., Chicago 6, Ill. Designed for both wet and dry pick-up, the new Hild vacuum can pick up either liquid or dry dirt without adjustments or change of parts. There are no "preliminaries" for the careless or untrained operator to forget or neglect, and no special precautions needed to guard against damaging the unit.

This safety feature is the result of a specially developed power unit. The Hild vacuum employs a "by-pass" motor which does not depend on the vacuum air stream for cooling. The air stream from the vacuum does not pass through the motor housing. Thus, the motor cannot be damaged by dust or moisture picked up by the vacuum. A separate independent cooling fan keeps the motor running cool even when the vacuum intake is "sealed" against the floor.

Other design improvements are also incorporated in the new Hild vacuum. For example, the ball-bearing swivel casters are equipped with thread-guards which always keep the machine rolling freely. Non-rusting swivel-type hose connections for both vacuuming and blowing are permanently built-in and will not become lost. A rack is provided for the hose.

Recorder Measures Rotor Temperature

An electronic recorder for accurately and quickly measuring temperature of the rotor in large electric generators has been developed by Minneapolis-Honeywell Regulator Co., Brown Instruments Div., Philadelphia, Pa.

The ElectroniK recorder has been designed to provide a better and more economical instrument to assist operators in avoiding overloads. In addition, the instrument furnishes a 12-in. strip-chart record which can be used as a guide for gradually cooling a generator.

The recorder has a range of 0 to 150° C., a limit error of 1.5° C., a dead zone of 0.3° C., and a pen speed of 1.4 min. full scale. Its range of rotor winding resistance is 0.1 to 4.0 ohms, and it has a dielectric test of 1,500 v. rms for 1 min.

In designing the new instrument, special consideration was given to users who, generating large volumes of their own power, want maximum safety and dependability for peak-capacity operation. The recorder is made as a special product with deliveries in about 90 to 120 days from receipt of order.

These cots contain the cure for most lapping

In a most important way, Armstrong's patented Accotex® Cots are different from all others. They contain certain "electrolytes" that eliminate the natural attraction between fiber and cot. Here's how this attraction is set up:

Because of the high humidity in spinning rooms, a microscopic film of moisture collects on both fiber and cot. These moisture layers contain tiny electric charges. When the layers come together as the fiber moves under the roll, the electric charges make the combined moisture layers act like an adhesive. When an end breaks under these conditions, lapping is almost certain to result.

By compounding Accotex Cots with certain electrolytes, Armstrong's rubber chemists dissipate the electric charges on the cot surface. This destroys the electrical attraction between the layers of moisture on cot and fiber. That is why mill men report that when frames are equipped with Accotex Covers, lapping ceases to be a serious problem.

Because spinning problems differ from mill to mill, Armstrong offers a complete line of specialized Accotex Covers. They are made in straight rubber compounds as well as in combinations of cork and rubber, each in different hardnesses. All have Armstrong's exclusive lap-resistant feature. Whether you spin cotton, wool, synthetics, or blends, you can get a cover especially formulated for your type of job from Armstrong.

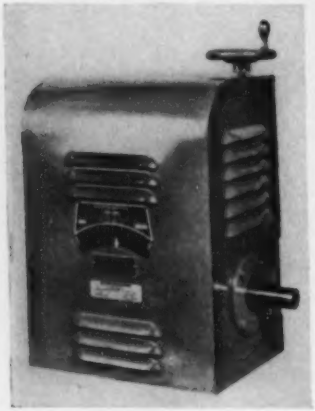
Get samples and test them in your own mill. Call your Armstrong representative today or write Armstrong Cork Company, Textile Products Department, 8303 Arch Street, Lancaster, Pennsylvania. Available for export.

ARMSTRONG'S ACCOTEX COTS

one of Armstrong's complete line of textile mill supplies

ACCOTEX APRONS **CORK COTS** **ROLL SHOP EQUIPMENT**

Variable-Speed Drive Features Compactness



A PACKAGED UNIT, the variable-speed drive is available at 1- to 15-hp. ratings, and offers variations from 16 to 1 to 6 to 1.

A new variable-speed transmission series, incorporating the Worthington tandem-belt design, has been announced by Worthington Pump and Machinery Corp., Harrison, N. J.

The new line, known as the Worthington Allspeed drive, will consist of six models, rated at horsepowers of 1, 3, 5, 7½, 10, and 15 respectively, and will offer variations of 16 to 1, 10 to 1, 9 to 1, 8 to 1, and 6 to 1 respectively. At 1,725 rpm. input, the 1-hp. unit offers a range of 215 to 3,450 rpm.; while the 15-hp. unit will vary from 370 to 2,200 rpm. with an input speed of 1,750 rpm.

Because of the tandem-belt design, the Worthington Allspeed drive is said to be particularly suited to applications where space limitations require extreme compactness. Upon advance specification, each of the units will be furnished for vertical or horizontal operation, to run in either direction.

Handwheel control will be normally furnished. Electrical remote controls are available when required.

Among the latest features in the new models are wide-spaced bearings designed to maintain the input and output shafts in true alignment, regardless of belt-tension load. All rotary motion in the unit is carried in shielded ball bearings, lubricated for life. All sliding fits are made with easily removable bronze-composition bushings. Bearings on both the input and output shafts are locked to provide for a thrust load.

New type self-cooling belts are provided, and, when necessary, belts can be readily changed without disconnecting the unit from other equipment.

The drive is available as a "packaged" unit, with built-in NEMA standard motors, or modified to suit specific requirements.

Electric Pallet Truck Has Many Improvements

SEVERAL NEW SAFETY FEATURES are included in the improvements on this new pallet truck.

The Model W, a compact, powerful, pallet-type truck built to handle pallet-loads weighing up to 4,000 lb. has been developed by Towmotor Corp., Cleveland 10, Ohio. Among the new features of this easily maneuverable truck is a new contactor panel, a positive-action brake with fool-proof dead-man control, improved differential action, and all-rubber, dual trailer wheels for smoother operation.

Operator controls of the model W are conveniently located for "fingertip" operation with either the right or left hand. These controls make it possible for the operator to work from any angle in picking up or depositing loads. A key switch provides positive turn-off of power to the dual-control buttons and prevents accidental or unauthorized use of the truck.

Other features include smooth hydraulic lift; rapid raising of heavy loads; powerful electric drive; and fast, agile maneuverability.

Moisture Tester Gives Sample Temperature Reading

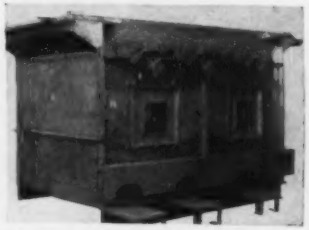
QUICK AND CONSISTENT checks on moisture in fibers and fabric can be made on this tester.

A new-model Universal moisture tester developed by Burrows Equipment Co., Dept. 4B, 1316 Sherman Ave., Evanston, Ill., designed for all types of material, is said to give direct moisture-percentage readings on a dial from 8½ to 40% instantly, without mathematical calculations or charts. Equipped with a built-in thermometer, the Universal tester automatically indicates the temperature of the sample. No separate temperature tests are necessary.

The instrument is extremely simple to operate and is said to be consistently accurate. Complete tests can be made in less than a minute.

Although the Universal tester operates by electricity, it requires no electric outlets or batteries and is fully portable.

New Ager Features Tension Control



A NEW AGER which features tension control of fabric regardless of the number of rolls in the machine is being offered by Cook-P&N Machine Co., Inc., 365 Dorchester Ave., Boston 27, Mass. Driven rolls can be at top on balloon and are divided into several groups with a motor driving each group. The machine shown is for desizing; similar machines are available for continuous pad ranges and print agers.

(Continued on page 248)

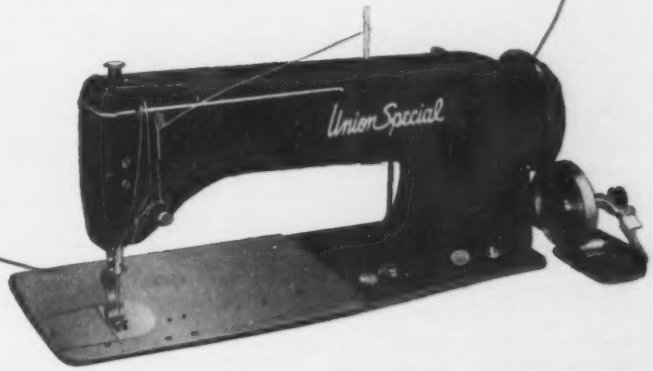
POPULAR WITH *Users...*

ALL across the country, users will tell you that there never has been a machine like Union Special's new LOCKSTITCH! For all kinds of single needle, plain seaming operations, here are the advantages it offers:

- **SMOOTH, FLAT SEAMS—EVEN ON CURVES!** New feed mechanism is specially designed to produce a smooth, symmetrical feed curve. Insures even feeding of materials—smooth, perfectly flat seams.
- **NO FEED MARKS! NO CUTTING!** Handles the lightest nylon, cotton, or rayon without feed marks or cutting.
- **PERFECT, UNIFORM STITCHING!** Stiffer needle construction results in highly uniform line of stitching. Improved hook timing provides better stitch control.
- **SUPERIOR FOR TACKING, BACK STITCHING, STAYING!** Everything you want in performance as a result of refined, scientific thread control. Less sensitive to foot lift variations when tacking.
- **FAST, LIGHT RUNNING!** New, higher speed. Light weight parts make for smooth, effortless operation—fast starting and stopping—positive, yet gentle, feeding action. Improved thread control minimizes thread breakage.
- **TIME-SAVING ADJUSTMENTS!** Push button control for quick, easy adjustment of stitch length, 5 to 25 per inch. New thread control tension allows full adjustment from outside the machine—easily, accurately, quickly!

Find out what the new Class 61400 Lockstitch can do for you! See our nearest representative or write UNION SPECIAL MACHINE CO., 403 N. Franklin St., Chicago 10, Ill.

UNION SPECIAL'S *New...* LOCKSTITCH!



For more information, write direct or use Reader Service post card.

New Product Developed For Print Washing

A new product, known as Atconil PW-35, has been developed to remove loose color and gums in the print-washing operation. The manufacturer, Atlantic Chemical Co., Inc., Centredale, R. I., states that this new product has gum-dissolving properties which are outstanding, and that it is an excellent dispersing agent for loose and unfixed color.

The foaming properties of Atconil PW-35 have been adjusted so that a light foam forms on the surface of the bath to prevent scum formation and to give an indication of the condition of the scouring liquor.

Atconil PW-35 is said to create more brilliant prints, promote thorough washing, improve white grounds and discharge whites, and to thoroughly remove gums for better finishes.

The manufacturer recommends Atconil PW-35 for use in a 0.1% concentration at temperatures ranging from 115° to the boil.

Fast Dye Gives Light Shades For Sweater and Carpet Yarns

A new dye, Calcocid Phloxine 2G, has been developed to give bright, economical, light-fast shades to sweater yarns and carpet yarns. The manufacturer, Dyestuff Dept., Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J., states that this dye has good leveling qualities in addition to its other features.

It is said to retain its clear brightness of tone in all depths of shade from a pink to a full red.

This dye can be used with Calcocid Fast Red BL Conc. for the red element of combination shades. It can be used with Calcocid Blue SAPG and Calcocid Yellow MCG for fading-on-tone properties. It is said to also work well in combinations with Calcocid Fuchsine 6B to produce rich, economical maroons which have good light fastness.

Penetrating Liquid Cleans Knitting Machines As They Run

A penetrating liquid, Solverloose, said to be harmless to metals, fabrics, and lacquer, has been developed by Ravbur Products, Inc., Ridgewood, N. J. It is said to dissolve oil, sludge, greases, wax, tar, and gums. It is not a penetrating oil because it contains no lubricate; and it is said to contain no acid.

To keep knitting machines clean as they run, mix Solverloose with the oil that is regularly used, and apply it in the usual manner. For cotton and rayon yarns, use about 10% Solverloose, and for woolen yarns use about 25% or more, until satisfactory results are obtained.

To free needle latches, the manufacturer recommends that you wipe some Solverloose, or oil mixed with Solverloose, on the needles and blow off.

If your knitting machines have stood overnight in a cold or cool room, the manufacturer recommends that you squirt a little Solverloose over the machines the first thing in the morning to insure easy starting and smooth running.

The needles of machines using latex thread may be cleaned by spraying or brushing Solverloose on them at intervals. After the liquid has been allowed a few minutes to penetrate, then blow it off. The manufacturer recommends this procedure at least once a day. To lubricate these needles, it is recommended that you apply a light stainless oil to them and wipe off or blow off any excess. It may be necessary to waste a few inches of the material when the machine starts running.

The manufacturer recommends Solverloose for loosening and dissolving the sludge, gum, and dirt that collects on other textile machinery.

Discharge Blue Developed For Acetate and Nylon

A new dyestuff, Celliton Discharge Blue 5GA, which dyes greenish-blue shades and is dischargeable to an excellent white, has been developed by General Dyestuffs Corp., 435 Hudson St., New York 14, N. Y. This Celliton Blue is especially suitable for application to soft fabrics that dye best on the reel, such as romaines, crepes, shantungs, and jerseys; because it exhausts best at a relatively high temperature. It is said to be especially suitable for necktie and dress goods. A range of blue through aqua green, nile green, and primitive green all the way to charteuse is available for discharge by the use of Celliton Discharge Blue 5GA, either alone or shaded to the yellow side with Celliton Yellow 5GA. These colors are said to have excellent brightness.

On nylon, Celliton Discharge Blue 5GA is said to give practically the same tone as on acetate, and it is nearly as dischargeable. The discharge on nylon shows only a very slight yellowish tint. The manufacturer states that a special feature of this dye for nylon is that it covers barré much better than other dischargeable blues. This property is said to be particularly advantageous for jerseys, which are liable to show slight constructional defects.

Here are the fastness properties of Celliton Discharge Blue 5GA. The fastness to light is fairly good to good (4 to 5) for full shades. The fastness to atmospheric fading of this blue on acetate is said to be somewhat better than the commercial blues. This dye is not subject to acid fading on nylon. The fastness to dry cleaning is excellent (5), which is said to be of special value for acetate and nylon, since clothing made with these fibers and dyed with a blue are far more often dry-cleaned than washed.

Orange Dyestuff Used For Dyeing or Printing

A water-soluble lueco ester of the straight anthraquinone vat dyestuff Indanthrene Orange RRT, called Algosol Golden Orange IRR-CF, has been developed by General Dyestuff Corp., 435 Hudson St., New York 14, N. Y. This new dyestuff can be either printed or dyed to give fairly bright, reddish-orange shades of good tinctorial value.

These shades are said to be much yellower than those obtained with Algosol Brilliant Orange IRKL. They are said to be also much yellower and much faster to light than those obtained with Algosol Orange HR-CF. The fastness properties of prints and fabrics dyed with Algosol Golden Orange IRR-CF on all fibers are in general very good or excellent.

This dyestuff can be dyed or printed on such diverse textiles as those made from cotton, linen, rayon, wool, silk, or mixtures of any of these fibers. Algosol Golden Orange IRR-CF can be used in self shades and in combinations.

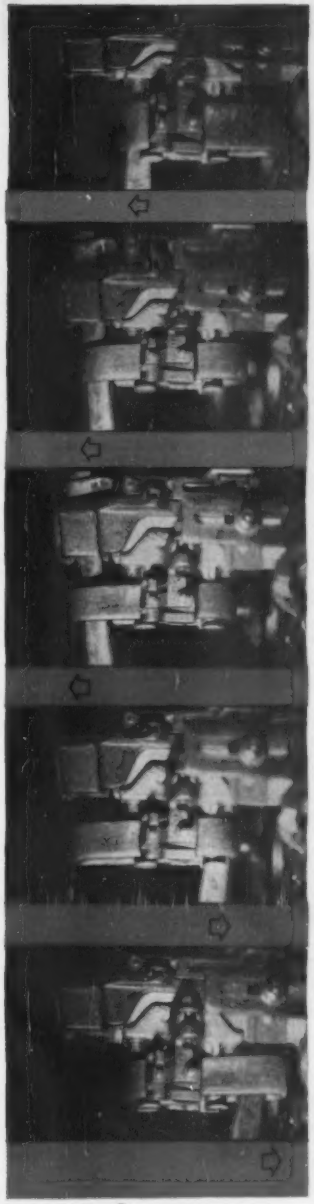
Here are some of the applications of this dyestuff.

Cotton, Linen and Rayon. Because of the very good fastness properties of this dyestuff, it is recommended for use on fabrics for draperies, upholstery, table cloths, washable dress goods and shirtings, and on spun rayons for sportswear and dress goods where appearance is even more important than fastness. The manufacturer states that the resistance of dyeings of this Algosol to caustic soda, chlorine, and peroxide permits its use on fabrics that are to be dyed in the yarn and then bleached, mercerized, or plissé printed. Goods dyed in the piece are also said to be very suitable for plissé printing.

This dyestuff is applicable to cotton, linen, and rayon yarns in circulating and other dyeing machines. Goods may be piece dyed with it in jigs and kettles. It is said that good exhaustion is obtained provided salt is used to promote substantivity and if the liquor ratio is kept reasonably short. Low substantivity for cellulosic fabrics in the absence of salt is particularly advantageous for the attainment of good penetration, evenness of coverage, and uniformity in long runs when application is carried out continuously on the padder.

Wool. This dyestuff is recommended for shrink-resistant materials, which must withstand repeated washings, and for the dyeing of wool in any stage of manufacture where the Algosol-dyed wool must withstand subsequent processing steps, such as stoving, bleaching, and fulling. Excellent (5) fastness to washing and fulling, very good fastness to potting and decatizing, and very good to excellent (6 to 7)

(*Continued on page 246*)



Follow-thru with Leather

see how the *Hairitan*®

CUT SHUTTLE COST
KINKY FILLING
INCREASE PROFITS

ENDLESS CHECK STRAP

cushions the stick at each end of its stroke

"Follow-thru" cushions the fireball pitch! . . . and the Hairitan Endless Check Strap cushions the picker stick as it approaches each end of its stroke.

These frozen-action photographs, taken at 1/20,000th of a second, show a newly installed endless check strap on a Draper X2 loom doing 175 picks a minute. Notice that this brand new strap already functions perfectly, cushioning the picker stick to enable picker and shuttle to move to end of lay without shuttle bounce. Notice the free sliding action, with tension uniform on each side of the stick – and also the perfect way in which the strap conforms to the angle of the stick.

The Hairitan Endless Check Strap is made of a single piece of choice quality Hairitan leather, folded double and cemented. It can be furnished hair-on or hair-off, in the standard lengths required for each Draper Loom for which the necessary fingers are available.

The Hairitan Endless Check Strap is an important member of the Orange Line team of loom leathers that work together to *give you more profit.*

The new catalog of G&K-DIXIE Textile Leathers proves, with high-speed photographs, the balanced follow-thru team performance of Orange Line Leathers. Send for your copy and enjoy this new freedom from bang-off!

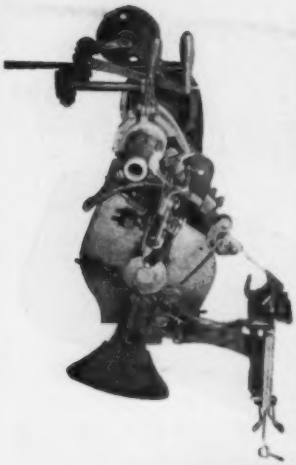
GRATON AND KNIGHT®

DIXIE LEATHER CORPORATION

Endless Check Strap

FAMOUS ORANGE LINE TEXTILE LEATHERS

GRATON & KNIGHT COMPANY, WORCESTER, MASS. • DIXIE LEATHER CORPORATION, ALBANY, GEORGIA *Affiliate*



You are looking at the

Most Flexible Winding Spindle

in the industry

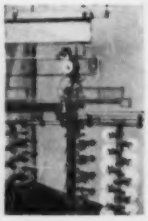
This basic spindle unit of the No. 50 Universal Precise Winder is used . . . not only to wind more than 90% of the world's coned synthetic yarn . . . but also to produce a wide *variety* of special work that is only hinted at on this page.

WINDING CREPE WITH MAGNETENSION

This device utilizes a magnetic field to provide constant, smooth tension, eliminating excessive peaks or loss of tension control caused by any uneven delivery from supply package.

WINDING THREAD ON BOBBIN SPOOLS

Large compact packages to deliver thread overend for the cutting trade are wound with this attachment equipped with automatic visible counter. A similar attachment winds the so-called "miniature" bobbin spool.



WINDING MULTIPLE ENDS FOR WIRE INSULATION, ETC.

Packages containing up to 30 ends are wound in perfect tape form from packages of previously-inspected yarn. Individual stopping mechanisms for each end permit tying single strands, avoiding "bunch" knots.

WINDING PINEAPPLE CONES OF NYLON

To put nylon into the best delivery form for full-fashioned, tricot, and circular knitting, the No. 50 Pineapple Coner with emulsion attachment is used, winding from tubes previously sized on the Universal No. 250B Single End Sizer.

WINDING 3° 51' CONES

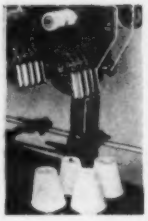
The large diameter of this cone increases production upwards of 12%. It is especially suitable for fine denier nylon because it delivers with more uniform tension on the knitting machine.

WINDING DYE TUBES OF SYNTHETIC YARNS

This Ray-Silk attachment winds synthetic yarn with a minimum amount of applied tension and pressure to produce soft tubes for uniform dyeing.

WINDING TWO OR MORE COPS

Two or more small packages per spindle can be wound with individual paraffin attachment, tension and stopping mechanisms. For example: three cops each 3½ in. long can be wound on one spindle.

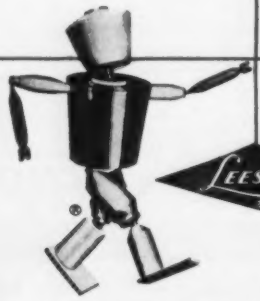


WINDING YARN FOR COVERING RUBBER

Here, two tubes per spindle, two ends per tube, are being wound for a rubber covering machine. Covered rubber yarn in skein form is then wound onto pineapple cones for the next operation.

WINDING HAND KNITTING SKEINS

Skeins of home knitting yarn are wound on No. 50 Winders equipped with special electrical attachments for automatically stopping all six spindles simultaneously at the predetermined yardage.



LEESONA

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Agents in every principal textile center throughout the world

Winding and Twisting Machinery for Natural and Synthetic Yarns

Letters from readers, *of both technical and general interest, will be considered for publication in these columns for the benefit of the textile industry. If you wish to add your knowledge and ideas to those expressed in the Round Table or elsewhere in* TEXTILE WORLD, *please write us a letter, or use the Reader-Service card bound into each issue. Origin of your letter will be kept confidential upon request in writing at the time you submit your contribution, but be sure to sign your name as evidence of good faith.*

Round Table

LETTERS FROM OUR READERS

PLY-YARN NOMOGRAPHS

Dear Editor:

Thank you for sending Mr. D. C. Snowden's comments on nomograph construction that appeared in the January and February issues. I enjoyed reading them.

The angle between the A and B axes may be any value less than 180°. I choose 70° because a larger "combined-yarn-count" scale was obtained. Mr. Snowden's maximum reading of combined count is about 35; with a 70° angle maximum count is a little over 44.

His comment on multi-ply yarn counts is also interesting. Personally I prefer angles less than 90° because the chart has wider application. In addition it is seldom necessary to reconstruct one of these charts after it has been published in the space that TEXTILE WORLD gave it.

TYLER G. HICKS

Hicksville, N. Y.

CORRECT LAY GEAR

Dear Editor:

Mr. Shaw is quite correct when he thinks we can do without too much calculating and formulating when we are looking for the correct lay gear on a slubber, intermediate, or roving frame. [*Round Table*, Jan., '51, p. 174]

I take a short-cut myself, and would like to have Mr. Shaw try the following simple formula. It is good for a large range of medium- to hard-twisted rovings.

Lays, or coils per inch =

$$4 \times [(\sqrt{1 + (8 \times \text{counts})} - 1)$$

(Multiple 4 may be smaller or larger as per local conception and practice)

Example: Find coils per inch for 3.0 hank

3.0 x 8 = 24
add 1 = 25
take square = 5
subtract 1.0 = 4
multiply with 4 = 16 coils for 3.0 counts

This formula is one which I have been applying successfully for many years on various hank counts.

JOHN DUERST
Clark Thread Co.

Clarkdale, Ga.

DOFFER SPEED

Dear Editor:

For several years our yarn mill has been running card doffers a little over 10 rpm., processing 15/16-in. cotton with the card cylinder turning a standard 165 rpm.

We recently wondered if increasing our doffer speed in relation to cylinder speed might not be beneficial in unloading the cylinder clothing faster, thus keeping it sharper longer, as well as giving us more production. We have had some controversy about the subject in our mill.

I am now running a slightly heavier picker lap, with the cylinder running at 165 rpm. and doffer at 13 rpm. on several of my cards. So far, I have noticed no appreciable difference in sliver or roving quality as compared with the more slowly produced sliver and roving.

If you have information on what the experience of others has been on increasing doffer speeds, I wish you'd let me know.

OVERSEER

Somewhere in Georgia

[*Have any of our readers had experience with increased doffer speeds?*—EDITOR]

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"Jenkins! That's not the kind of motion I hired you to study!"

OLD BUT YOUNG

Dear Editor:

I wonder if your readers would be interested in a word or two on one of the most remarkable men in the British woolen trade. He is Mr. Theodore C. Taylor, chairman and managing director of J. T. & J. Taylor Ltd., woolen manufacturers located at Batley in Yorkshire.

Mr. Taylor is a centenarian and still retains an active interest in the business.

For more than 60 years, Mr. Taylor has extolled the advantages of co-partnership, and the success of his business is a worthy testimony to the soundness of his views. Today, four fifths of the share capital of the business is owned by the workers in his mill.

The firm pays the standard rate of wages. If profits permit it, a 5% dividend is paid to shareholders; and in special cases when profits permit, an extra dividend is paid on shares and also on wages and salaries.

In 1949, for example, in addition to the 5% on share capital, a 10% dividend was paid on shares and wages. The workers' bonus is payable in either cash or in shares. Most of them choose to take the shares.

Shares thus distributed rank as "B" shares, which, although they participate in profits, do not give the same control as "A" shares. The latter are held by the firm's founders and successors.

Mr. Taylor recently declared that the scheme is the best way to promote harmony and goodwill because it gives everyone a vital interest in the success of the firm. It also results in production of the best product at the best price.

Do any American mills operate on this basis?

H. M.

Yorkshire, England

RIGHT TO INFORMATION

Dear Editor:

In my opinion, management should let workers know what is taking place in a mill at least a few hours before outsiders learn about it in the local newspapers or over the local radio.

It is rather humiliating to the average worker to hear news from friends or acquaintances, or read it in the newspaper, when it concerns incidents or plans right in the department or mill where he is employed. Put yourself in his place and immediately you will see why this is true.

Every employee feels himself a sort of local authority on the place where he works. When others scoop him on the news there, his pride suffers. You don't need a degree in psychology to realize that he builds up resentment every time this happens.

If this problem cost money to solve, mill management would not overlook it. But since it is supposedly a minor matter, it may escape notice until the accumulated effect shows up in serious forms—such as labor turnover, lowered production, waste, rejects, and even accidents.

Just to make sure, it pays to grant employees first right to all information concerning the mill. After all, it's no more than plain common sense.

George M. Dodson

Harrisburg, Pa.

WOOLEN-MILL WOES

Dear Editor:

The present high price of wool is leading many woolen mills to try the preparation, spinning, and weaving of materials formerly not used, such as rayon, shoddy, cotton, and other fibers.

Many mills are finding out in actual practice that the lower the quality of the blend, the less predictable are the drafting qualities of the yarns.

Perhaps there is not always sufficient care given to the amount of drawing. If the best yarn is to be produced, the correct draft must be used and special care exercised. In general, it may be said that irregularities in the condensed slubbing are less when the slubbing has the greatest possible number of fibers in its cross-section.

We have also noted that, within certain limits, better yarns are often produced when the drafting is greater than usual.

Hard ends can cause trouble. The reason is that there are potentially fewer fibers in the cross-section when hard ends are present. Since there hard ends cannot be disintegrated by normal drawing, the end functions much the same way as a single fiber.

Wool spinners must now handle material of such diverse natures that a full knowledge of fiber characteristics and particular blends is needed before one can decide on the best draft for spinning.

Careful trials of yarn strength multiplied by yarn count are well worthwhile to determine the best end-product. The effect of twist on spinning output is also well known; and if an incorrect or weak condenser slubbing is made, the extra twist required to give comparative yarn strengths will lower one's spinning production.

Woolen mills, in short, have plenty to worry about these days.

Britisher

Huddersfield, England

TEST YOUR TEXTILE IQ

► Each correct answer rates 10 points, a total of 70 is passing; 80, good; 90, excellent; 100—you're a genius. Key to answers is on page 206.

1. An IP-2 tester is designed to test:
   a. twist in yarn
   b. moisture regain
   c. twist in roving
   d. yarn strength

2. Loom stops can be reduced best by:
   a. increasing loom speed
   b. good warp preparation
   c. installing blowers
   d. decreasing humidity

3. Picker-lap yards can be increased with:
   a. pneumatic rack control
   b. less calendar-roll weight
   c. less lap-rack pressure
   d. more blows per inch

4. ASTM standards for the textile industry are set by committee:
   a. A-23
   b. B-44
   c. D-13
   d. E-37

5. Knitted-glove designs are made by:
   a. complicated repeats
   b. single fancy pattern
   c. single plain design
   d. simple repeats

6. In most mills, spinning frames are cleaned by:
   a. spinners
   b. fixers
   c. clean-off hands
   d. section hands

7. On a yards-per-pound basis, glass yarns compare to:
   a. ½ den.
   b. 1 den.
   c. 1½ den.
   d. 2 den.

8. Most of the savings resulting from the use of homogenizers in slasher rooms come from savings in:
   a. labor
   b. starch
   c. equipment
   d. steam

9. According to Du Pont tests, the effective concentration of the best anti-static agents for nylon is:
   a. 0.1 to 0.5%
   b. 0.6 to 1.0%
   c. 1.1 to 1.5%
   d. 1.6 to 2.0%

10. A "C factor" is used to express:
   a. dry-can heat
   b. card draft
   c. atmospheric conditions
   d. degree of contraction

Exploring

THE TEXTILE COMMUNITY

By MILDRED BARNWELL ANDREWS

Trained Hands and Minds Make Good Jobs Better

► *If a deserving young man or woman needs help in getting a textile education on vocational or college level, the industry stands by to help.*

A Textile School the Industry Built

MILDRED ANDREWS

We were sitting around the long table in the office of Dean Campbell at the School of Textiles, North Carolina State College: several of the young students, two graduates of the school, the dean, and I, tossing the ball back and forth on the type of radio program people wanted to hear about schools and colleges . . . and especially textile schools. The room, charmingly panelled in soft and mellowed walnut, lent itself to the amiable discussion. Old shuttles, rich looking with the patina of decades of weavers' handling and now serving as containers for graceful ivy and trailing philodendron, tied in the old traditions of the textile industry with the new philosophy exemplified by the Dean's office—as modern as the college and the industry's educational outlook.

The School of Textiles, North Carolina State College, is now the largest textile college in the world. In eight years it has tripled its enrollment because of advantages made possible by the North Carolina Textile Foundation grant of more than a million dollars, and other grants contributed by textile interests of the state. It has greatly increased its physical capacity through state appropriations of nearly another million dollars. Progress at N. C. State is representative of the deeper philosophy of the trained hand and the trained mind sponsored by the textile industry on every educational level.

Opportunities Unlimited . . .

Expansion similar to that taking place at N. C. State is being undertaken by textile interests in every textile state to raise the standards of schools, to obtain top-flight teaching staffs and the modern buildings and equipment needed to train men for the multiplicity of jobs of this great and vital industry. Educational opportunities offered by U. S. textile mills are surpassed by no other industry in the country. It is estimated that approximately $12,000,000 has been poured into educational channels by the textile mills of America within the last five years, and the sum increases annually. The students of these schools and colleges are the young men who will build the textile communities of tomorrow. The parents of many of them represent textile communities of today, for a good percentage of the students are in the schools because of the scholarship opportunities offered by mills to children of their employees.

At N. C. State I met students from India, from China, from European countries, as well as those from New England, the South, and the Western states. In our discussion group that rainy winter's afternoon was a graduate of Yale who was taking postgraduate work in textiles. Another was a young fellow from a small town in Tennessee who was there on a mill-worker scholarship. I asked the Yale man, "Why did you decide to come down here and take this textile course?" "I had a job," he said, "in a textile mill one summer, and by fall I knew I had to find out all the angles of this business. It had a grip on me by then. When I leave here I want to take some old broken-down mill and rework it into the showplace of the industry. It may take a long time, but I couldn't do that if I didn't get the basic training offered here."

And the young former textile worker—he had been a roving hand—said in answer to the same question, "I knew I'd always work in a mill, and I knew too that someday I'd get to the top. But I figured the quickest way to get there was to get the best training available, so I applied for a scholarship and here I am." His eyes had an eager look about them as he went on to outline some of the special projects he had in mind when he had his degree. Then he said in a serious and wistful manner, "I wish a radio program could tell young people of the many ways they can get a scholarship or other help if they want it. I know what such assistance has meant to me."

Assistance for Anyone Who Deserves It

It can safely be said that any young man or woman who desires a textile education can get some assistance from the industry. It may take the form of various types of scholarship or fellowships. It is impossible to list them all in a limited space, but a few examples will give the range and variety. At the four New England textile schools, 25 freshman scholarships were awarded last year.

Berkshire Fine Spinning Associates, Inc. has established scholarships for up to ten of its personnel to study textile engineering. The Graniteville Co. awards each year six William Gregg Scholarships to children of mill employees. Bibb Manufacturing Co. has funds available for sending bright boys and girls to college. The Springs Cotton Mills awarded scholarships for 1950-51 to 35 applicants, children of their employees.

Many textile mills have vocational courses. Outstanding is that of Crown Manufacturing Co. in Pawtucket. Others sponsor certified correspondence courses, refunding part of the cost to those who complete the courses. Avondale Mills, in addition to the scholarships and fel-

(Continued on page 230)

How the Management Team Can Build Better Human Relations

Pointers FOR SUPERVISORS

SINCERITY OF PURPOSE Means Good Labor-Management Relations

By C. A. WIMPFHEIMER
President, American Velvet Co.

▶ In a recent issue [TW, December 1950, p. 124], the editors of TEXTILE WORLD published an article on the profit-sharing plan at American Velvet Co. in Stonington, Conn., operated by A. Wimpfheimer and Bro., Inc., because we felt that the successful operation of this plan was worthy of recognition. But even more important perhaps than the success of the plan is the spirit behind it which has made profit sharing at American Velvet a feasible, working idea. This spirit of cooperation and labor-management understanding, necessary in all successful management-labor relations, was recently defined by C. A. Wimpfheimer, president of the company, in a speech given at the third annual conference of the Council of Profit Sharing, held in Cincinnati last December. We feel that the ideas expressed by Mr. Wimpfheimer are valuable, not only as they apply to profit sharing, but also as they represent a sound basis for general good labor-management relations. We are glad, therefore, for the opportunity to present them to our readers in this column.

THE MOST IMPORTANT PHASE of good labor relations is what I call sincerity of purpose. By that I mean confidence and teamwork on the part of management and labor. Union contracts or promises on the part of management or labor mean nothing if that sincerity is lacking.

In our plant, the greatest evidence of the rewards which this attitude can win appears in the success of our company profit-sharing plan.

Sincerity of Purpose and Profit Sharing

Profit sharing was first talked about seriously at American Velvet Co. after we had discovered that our mill could no longer produce profitably under the same good conditions as in past years. Since its establishment in 1845 by my grandfather, the company had always been headed by a member of the family. Neither management nor labor had anticipated the need for a change from older ways of doing things, until a sixteen-month shutdown during 1938-39 forced the issue. It was at this time that our profit-sharing plan was adopted, after regional wage levels and "fringe benefits" had been established with the union.

The first profit shares were paid to workers just before the Christmas of 1940. Since that time, 30% of company annual profits, with one-third paid into a retirement trust fund and two-thirds paid in cash, has been distributed annually among employees. It is interesting to note that, since the plan has been installed, no man-hours have been lost due to any misunderstanding. No labor troubles, no resort to outside arbitration, no layoffs, no prolonged bargaining sessions have occurred. Turnover has been nil during these years of successful operation of the plan.

We feel that sincerity of purpose by both labor and management is behind this success. Profit sharing must give the worker a vested interest in production, a just reward for increased effort. That's the purpose. But it must be sincere.

Sincerity of Purpose and Bargaining

Let's apply this idea to "bargaining" between labor and management. You get a new concept: labor asks for what it sincerely needs. Management grants what it can sincerely afford. Under profit sharing, both know their own limitations in terms of the business itself. Labor doesn't start bargaining for a 25% increase when it expects 10%. Management doesn't knock down the 10% when it is justified. Sincerity of purpose means more than understanding between labor and management based on mutual respect and day-to-day intelligence about each other's problems—it means, too, a willingness to share responsibility as well as profits.

And everybody gains! Profit sharing absorbs the time lag from the start of processing an order until it is delivered. Wouldn't most stockholders be glad to pay additional compensation to workers if they knew additional profits could be made? How can we know this unless we figure out some solution such as profit sharing?

Sincerity of Purpose and Paternalism

There is nothing "paternalistic" about the attitude of my workers to me or vice-versa. I'd say that the union helps to knock out the paternalism of which many profit-sharing executives are accused. My employees tell me where to head in now and then! I would be a fool to be offended by honest criticism. After all, they take it from me, and teamwork must be a two-way operation if mutual confidence and trust really mean anything.

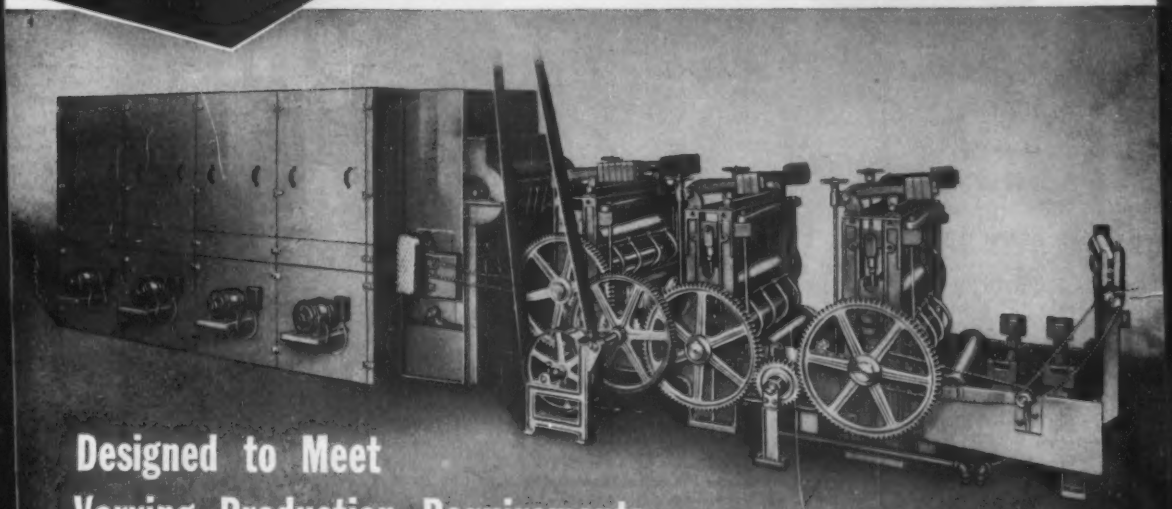
The bargaining power of the union committee members makes them more valuable in a realistic sense than "Yes-men". They help me run the plant, because profit sharing has helped them to identify themselves with the business as a whole—not just wages or their own individual work.

There are few things which are more important to a human being than a sense of being important—not only to himself as an individual but to his co-workers, the plant, the community, or his country. When he knows his own importance, a worker becomes an individual—not a non-entity or a number.

(*Continued on page 230*)

Flexible
Modern
Efficient

SARGENT'S BACKWASHER and BACKWASH DRYER



Designed to Meet Varying Production Requirements

BACKWASHER—Available with one to five bowls. 44" wide bowls give increased liquor capacity. SARGENT'S rearrangement of top squeeze roll levers allows easy accessibility for operator; permits more than double usual number of ends to run through machine. Convenient working space provided by development of pneumatic loading for squeeze rolls, eliminates weights, rods, springs and adjusting wheels.

BACKWASH DRYER—Available with 29" or 44" aprons. Wire cloth or perforated plate aprons assure softer feel, better color, greater fibre strength. Warm air circulated by motor driven pressure-type fans passes alternately through extended surface heating coils and fibres. From 14 to 60 ends dried at one time. Available in production capacity of 100 to 600 pounds per hour, with 3, 4, 5 or 7 circulating fans.

Write for Complete Details

Conveniently located inspection doors at doffer end.

SINCE 1852

LARGEST MANUFACTURERS OF STOCK DRYING AND WOOL WASHING EQUIPMENT IN AMERICA

C. G. SARGENT'S SONS CORPORATION

Graniteville, Massachusetts, U.S.A.

REPRESENTATIVES

F. E. WASSON — 519 Murdock Rd. • Philadelphia 19, Pa.

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M. F. BECKER & ASSOCIATES — 122 So. Michigan Ave. • Chicago, Ill.

HUGH WILLIAMS & CO. — 47 Colborne St. • Toronto 1, Canada

Kinks AND SHORT-CUTS

Here's How To Build A Power Hacksaw

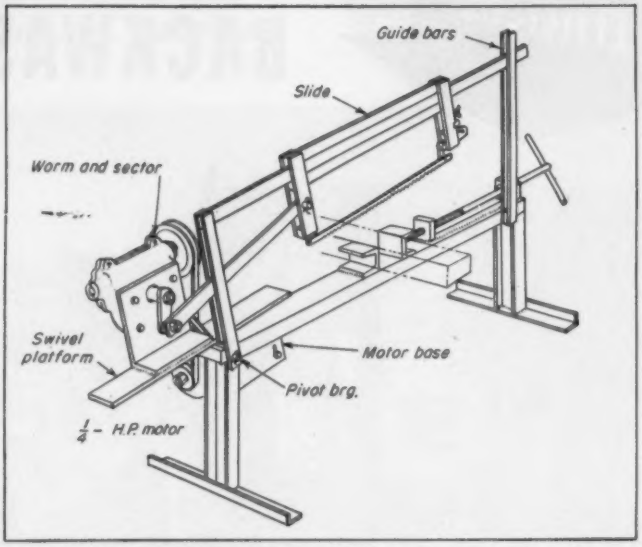
I built this power hacksaw from plain steel shapes like angles, channels, and rectangular stock. The main frame is made from channels supported on angle-iron legs. I made the vise from channels which fit directly on the cross-frame member. One side is welded and the other is left loose to slide back and forth with the clamp screw. The nut for the clamp screw is welded to the frame, as is the rear support.

The blade holder can be tightened very easily, as you can see from the detailed insert on the diagram.

A ¼-hp. electric motor furnishes the power through a worm and worm gear box and a V-belt drive. The diameter of the pulleys should be determined by the speed you want to run the saw.

You can move the motor and worm-gear assembly on the swivel platform to regulate the weight you want on the saw blade. If you move the assembly forward, you will increase the weight or pressure of the saw blade against the work. By moving it backward, you can lighten the pressure.

There are lots of things you can do to modify the design to suit your own needs. For example, if you place a removable cross pin in the guide bars, you can hold the saw open when loading, and have both hands free. Also you can make a small reservoir for cutting oil to cool the blade. *Bob Mehaffey, North Bend, Neb.*



***THE DESIGN OF THIS POWER HACKSAW** is pretty simple. All you need are plain steel shapes like angles, channels, and rectangular stock. A ¼-hp. electric motor will power the saw through a gear reduction box.*

Too Much Spring Tension Wears Out Skip and Top Cone Gears

If you look around the machine shops of many mills, you will find a lot of discarded skip gears and top cone gears. These gears had to be replaced because they were grinding each other. The main reason that these gears grind each other and need to be replaced is that too much spring tension on the tumbler shaft causes the dogs to hit the jaws too hard. Soon the tumbler shaft gets knocked out of line a little bit, and the skip gear and top cone gear do not mesh properly.

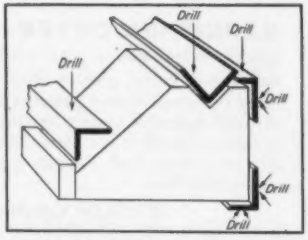
The spring tension should be adjusted so that the skip gear will contact the top bevel gear to suit the speed of the top cone. Here's how to adjust the tension of the spring.

Raise the top cone gear out of mesh with the skip gear. Then set the spring so that you have the least possible tension on it. Lower the top cone so that the gears are in mesh, and start the frame.

Keep increasing the tension on the spring until the skip gear will contact the top cone gear at the speed of the top cone gear. If the tension on the spring is correct, you will get a noiseless change at the completion of every traverse.

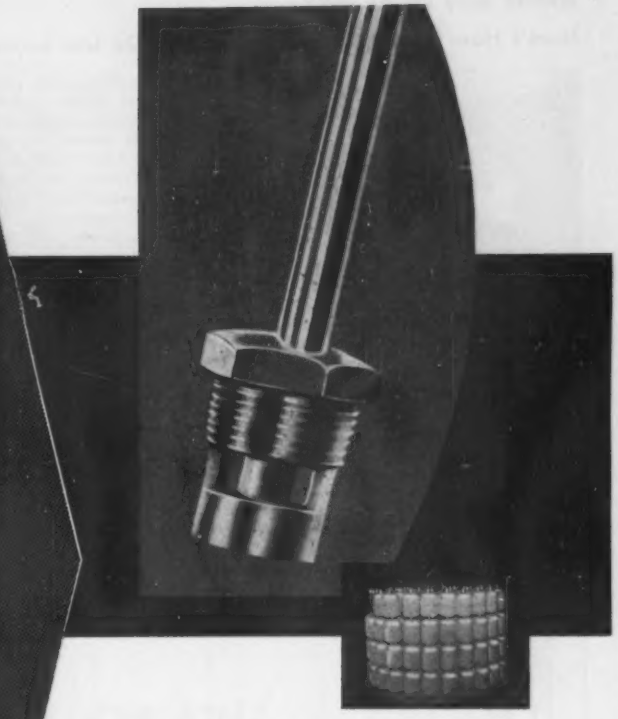
We have found from experience that we get longer life from these gears with spring tension set correctly. *William Shaw, Providence, R. I.*

Build Your Own Angle-Iron Drill Block



***THE ARROWS SHOW** the different ways to drill angle iron on this angle block. I have been using this block for some time and find it very successful. I don't give any sizes here because you can build it to suit your own drill press needs. Walter W. Wentz, Hartford City, Ind.*

THIS IS THE *NEW* PACKAGE DYE SPINDLE YOU'VE BEEN LOOKING FOR!



- Eliminate replacement cost
- Entirely new construction
- Indestructible
- Greater Flow—for better dyeing
- Minimum Resistance—Open flow to package
- Interchangeable for all sizes of dye tubes

Developed by the Manufacturers of
Stienen-Obermaier Equipment.

BUILDERS OF

Cotton and wool dyeing machines — for beams • packages • raw stock • skeins • rayon cakes • dye spindles • perforated tubes • centrifugal pumps • extractors and dryers

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Lead with the LEADER
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For more information, write direct or use Reader Service post card.

Kinks AND SHORT-CUTS

Here's How We Replace Friction Gears On Our Looms

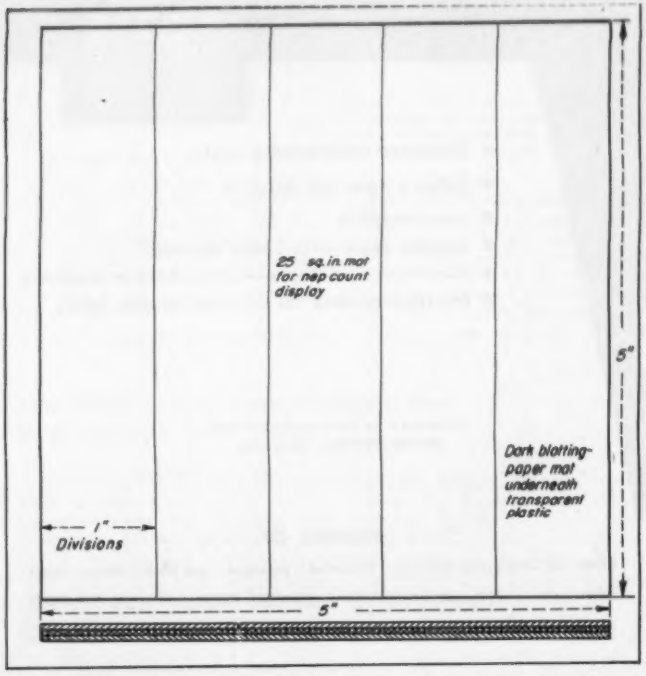
WE DRILLED AND CHISELED out a part of the friction housing, so that the loomfixer can insert a wrench and loosen all four nuts and bolts which hold the top drive gear in place. The loomfixer can replace the top drive gear without moving the motor, end bearing, or opening up the friction in order to get a wrench in position to loosen the necessary nuts.

In order to change the top drive gear on the end of the crankshaft of a loom, it is usually necessary to move the motor, end bearing, or open up the friction in order to get a wrench in position to loosen the nuts. On our modified model-D Draper looms, we drilled and chiseled out a portion of the friction housing, so that the loomfixer can insert a wrench and loosen all four nuts and bolts which hold the top drive gear in place. The friction shown in the accompanying picture has been running consistently for 18 months on trial without any loss of production or quality.

Here's how we change the top drive gear. We turn the crankshaft until two of the nuts are in a position to be reached easily with a wrench. The loomfixer loosens the nuts and bolts which hold the old drive gear in place, and replaces the top half of the old drive gear with half of the new gear. He then inserts the bolts, tightens the nuts, and turns the crankshaft half way around to bring the other half of the old gear in position to be removed. He replaces this half of the drive gear in the same way that he replaced the other half.

We make sure that the weak spot of the new top drive gear does not lie on the bottom drive gear when the loom is picking from either side. If it were on the weak spot, it would impose a greater strain on the top drive gear and might make it break where it has been split for removal and replacement. If the top drive gear is properly replaced, and a reasonable amount of care is taken to line it up the way it should be, the results will be highly satisfactory in both time and energy expended. *Warren K. Knowles, Holyoke, Mass.*

A Quick, Easy Way To Make Your Nep Counts



THIS NEP-COUNTING TEMPLATE can be made easily and at very little cost. The mat is a piece of blotting paper glued to a piece of stiff cardboard. The cover is made of transparent plastic material with lines scratched on it one inch apart.

The main objection to the conventional system of making nep counts has been that considerable time is required to count the neps in a 100-sq. in. area. This contributor has found that he gets results from 25 sq. in. comparable to counts taken from the larger area. He multiplies the number of neps found in the 25-sq. in. area by four to get a direct comparison with nep standards based on the 100-sq. in. area.

He uses a template made in this way. The mat itself is a 5x5-in. square of dark green or blue blotting paper similar to that used for desk pads. This square mat is glued or cemented to a stiff cardboard base of the same size.

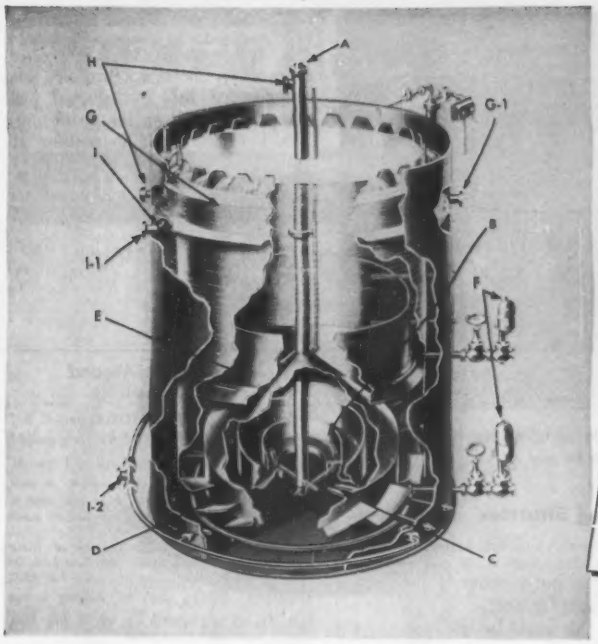
The surface of the mat is roughened a little with a piece of card wire or a stiff brush to raise sufficient nap to hold the sample. The cover for the mat is made of transparent plastic material cut to the same size. Lines one inch apart on the cover can be scratched on with any sharp-pointed tool.

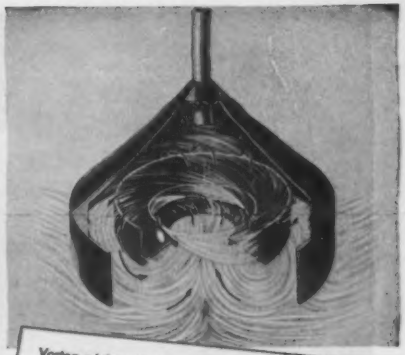
These lines are recommended to make the nep counting easier. Each 1-in. division is counted separately, and the totals of all divisions are taken for the nep count of the whole area.

To get the samples, hold the mat under and in contact with the doffer web of a stopped card. Place the transparent cover over the web above the mat and hold securely in place. The enclosed section of the web can then be lifted out.

The cover may be held in position with paper clips or with Scotch tape, without moving the web.

The back of the mat may be labeled with the card number, stock, and any other details that may be needed for the record.





Vortex mixing eliminates need for submerged moving parts in the Worthington Cold Process Slurry Type Precipitation Water Softener and Coagulator.

REACTION TANK of Worthington Slurry Type Softener (Slurry bed eliminated for clarity). (A) Raw water influent line. (B) Vortexor for optimum slurry production. (C) Chemical Applicators. (D) Slurry bed rotator. (E) Symmetrical Slurry concentrator. (F) Proportionate sludge removal. (G) Collector trough for treated water. (G-1) Treated water effluent. (H) Complementary recirculation. (I) Filter wash water compartment. (I-1) Filter wash water suction. (I-2) Filter wash water return.

This slurry bed stays put!

. . . and troublesome variables are out

These Features Give You The Uniformity You Want

WORTHINGTON SLURRY TYPE PRECIPITATING WATER SOFTENER AND COAGULATOR gives consistent, uniformly softened water

If it's clear, uniformly softened water you want, this unique Worthington Water Softener is just what you need. Concentrated quick mixing and rapid recirculation of applied chemicals and raw water, *achieved by hydraulic energy instead of submerged mechanical moving parts*, is an important, progressive development in the water treatment field.

New Bulletin W-212-B5 gives you 16 pages of vital facts about this unique cold process water softening method. Write for your free copy today.

REMEMBER . . .

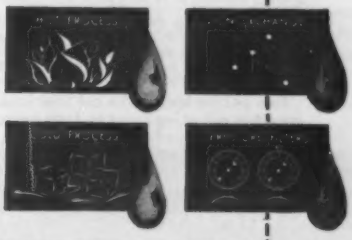
Worthington engineers *all four* water conditioning processes; therefore, can give you unbiased recommendations on which process is right for you . . . further proof that *there's more worth in Worthington. Worthington Pump and Machinery Corporation, Water Treating Division, Harrison, N. J.*

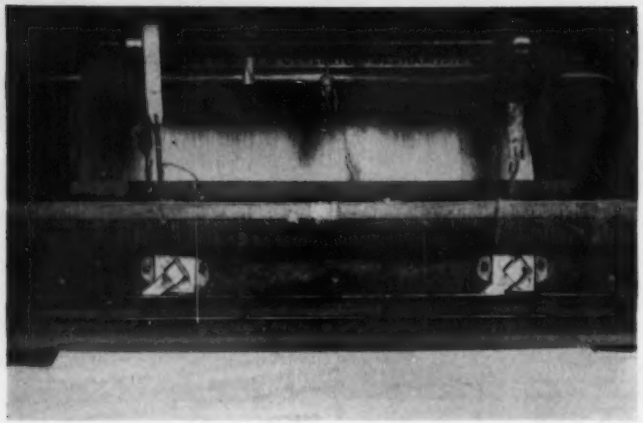
10-1

WORTHINGTON

WATER CONDITIONING

Worthington Makes More of the Equipment for All Types of Water Conditioning Systems





THE RICHMOND SHUTTLE GUARD is shown in the operating position. This two-ball catch guard can be raised to give the weaver access to the reed.

My Shuttle Guard Eliminates Flying Shuttles

I designed this shuttle guard to keep the shuttle in the shed. Most shuttle guards are designed to deflect the flight of the shuttle into a downward direction and not necessarily to retain the shuttle within the shed. A shuttle guard which will keep the shuttle in the shed must be large enough to do the job, and guards of this size must be movable in order to give the weaver access to the reed.

My shuttle guard, which is marketed by Direct Distributors Ltd., Regent Bldgs., Borough Rd., Darwen, Lancashire, England, is extremely simple in construction and operation. It has been extensively tested under mill conditions, and it is not only very effective, but is cheap to install. It is not subject to wear.

In this guard we use spring-loaded ball catches to hold the guard in both the operative and inoperative positions.

The guard is adjustable by hand from one to the other of these positions; but if it is left in the inoperative position when the loom is started up, it automatically assumes the working, protective position.

The sliding bars are attached to the reed cap with angle brackets. Each bracket has a slot to allow adjustment of the guard. In each bracket is a ¾-in. ball catch; and as the guard slides down the sleeve brackets, the spring-loaded ball is depressed and falls into a notch on the guard arm. This locks the guard in position at working level. When the weaver raises the guard, the ball catch falls into a second notch and holds the guard up. *Henry Richmond, England.*

Best-Kink Award for January

Each month TEXTILE WORLD awards $25 to the submitter of the kink which is judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the kink appears.

The best kink for January, according to TEXTILE WORLD reader-judges, was:

"Our Bristle Holes Are Accurately Drilled"

Leonidas J. Beland
Greenville, N. H.

Mr. Beland is being sent a check for $25 with the compliments of TEXTILE WORLD.

$200 for Best Kink in 1951
$25 for Best Kink Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know of many kinks and short cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your kink may win the $200 check for the best kink of the year or the $25 check for the best kink of the month, maybe both!

Send in your kink now. There is always a contest going on. The more good kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the kinks in this and other issues. You will get ideas you can use as well as inspiration for kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill men can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published kink will be judged impartially by other mill men. In case of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $200 prize contest for the year. Monthly contest confined to kinks published that month, yearly to those published in calendar year 1951.
3. All kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred kinks in each issue. Their votes will select the best kink, and their decison will be final.

Send kinks to whichever address you prefer:

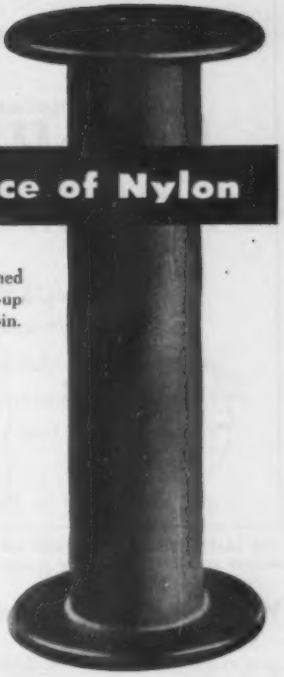
TECHNICAL EDITOR, TEXTILE WORLD
330 W. 42nd St., New York 18, N. Y.

SOUTHERN EDITOR, TEXTILE WORLD
367 Ridgewood Ave., Charlotte, N. C.

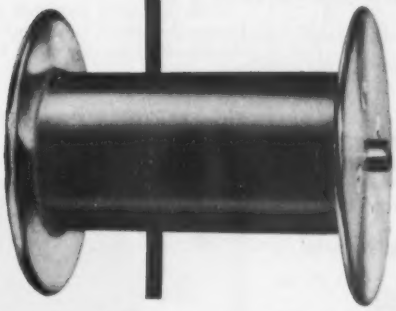
NEW ENGLAND EDITOR, TEXTILE WORLD
P. O. Box 305, Salem, Mass.

TWO NEW MACK BOBBINS

built to stand the crushing force of Nylon



These two new Mack bobbins are specifically designed to take the crushing force of nylon—one as a take-up bobbin, the other as a twister or spinner-winder bobbin. Both these bobbins have bakelite barrels.



New Mack Take-up Bobbin Features Molded Bakelite Barrel and Aluminum or Stainless Steel Heads—This new take-up bobbin for nylon and synthetic yarns has a molded bakelite barrel. Heads of either aluminum or stainless steel are riveted through the barrel for maximum head-holding power. Dimensional stability is assured regardless of humidity conditions. Felt pads between barrel and head prevent yarn trapping. Despite deliberate efforts to crush this bobbin by excessive winding tension and lengthy steaming at high temperatures not one has failed in service.

Nearly a Year of Mill Testing Preceded the Announcement of These Bobbins—Both these Mack bobbins, under development for more than two years, have been tested in actual mill use for a period of nearly a year. During this time there has been an opportunity to perfect these bobbins to the point where we feel confident that not one will fail if properly used.

Vibrometer Tested—Concentricity Tested—Dimensionally Stable—Additional test facilities have been added to our plant to give these two new Mack bobbins the same thorough vibrometer and concentricity tests that are applied to all types of Mack high speed bobbins. These new bakelite bobbins retain their dimensional stability through repeated steamings, thereby eliminating the need for reboring.

Mack Twister Bobbins Withstand Steaming Without Distortion—This new Mack all-bakelite twister bobbin is designed for high speed operation and can be subjected to steaming time after time without danger of distortion or change in bore. The need for re-reaming the spindle bore is eliminated and with it the resultant danger of unbalanced bobbins.

Bakelite barrels of any desired wall thickness are reinforced top and bottom with press fit molded bakelite bushings. This unit is machined both before and after assembly in order to assure concentricity and balance. Bushings are reamed to fit your spindle.

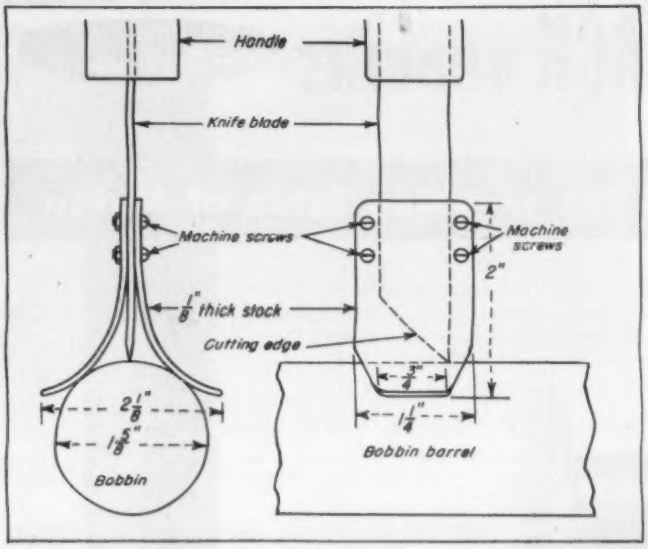
Heads of high impact bakelite are held on by screws located in such a manner as to lock barrel and bushing together.

Winder Spinner Bobbin Has Vulcanized Fibre Heads—When used as a winder spinner bobbin, the same type bakelite barrel is equipped with vulcanized fibre heads for greater impact strength and lower cost.

We're looking forward to seeing you at Booth 72, Knitting Arts Show

FOR FULL INFORMATION AND PRICES on these and other Mack bobbins, write, wire or phone The Allentown Bobbin Works, Inc., 417 N. 14th St., Allentown, Pa. Phone Allentown 5-1501.

ALLENTOWN BOBBIN WORKS, INC.
ALLENTOWN PENNSYLVANIA



THE SAFETY GUARD on this knife will prevent accidental cuts on employee's hands and damage to bobbins. The guard is adjustable to any size bobbin.

We Have a Safety Guard for Bobbin-Cleaning Knives

Mills equipped with bobbin-stripping machines should have little need for cutting roving from bobbins. Many mills, however, still cut the roving from bobbins with a knife. A knife without a guard will damage the bobbins and may result in injury to an employee's hands if it slips off the bobbin.

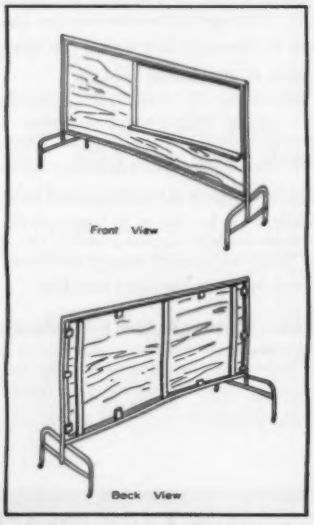
This guard was designed to prevent both the knife cuts on the bobbins and accidental injury to employees.

We made the guard from two pieces of flat metal stock about ¼ in. thick, 2 in. long, and 1¼ in. wide. We drilled four holes near one end of each piece and bent the pieces to shape as shown in the drawing. The flare on the bottom of the pieces permits the use of the guard on various-sized bobbins.

We ground the end of the knife blade at an angle to get easier cutting. To adjust the guard, we use an empty bobbin of the size to be cleaned. We loosen the screws in the guard and place the point of the knife blade in contact with the empty bobbin. Then both plates of the guard are put in contact with the bobbin, and we tighten the screws on the guard.

With this guard, the knife will not damage the bobbin barrel, and it cannot slip off of the side of the bobbin.

Portable Screen Has Welded Frame



THIS SCREEN is made by welding together a frame from ¾-in. steel tubing and filling the frame with a sheet of plywood.

Here's an easy way to make a portable screen or small partition to use in your plant.

With ¾-in. steel tubing, make a frame similar to the one shown in the sketch.

The legs are made by bending a tube so that the ends rest on the floor and rise vertically from the floor to the cross-member. A horizontal brace is welded to the legs, and casters are put in the ends of the legs.

You will need two pairs of these legs.

The screen frame is then welded to the legs; and small metal brackets, with screw holes in them, are welded around the steel-tube frame.

A sheet of plywood is cut to fit the frame. It is held in place, in the frame by wood screws inserted through the brackets.

Such a screen is good for temporarily isolating a small section of a room and for such uses as a blackboard and bulletin board.

Mills will find them useful in various over-all heights and lengths. *The Lincoln Electric Co.*

This Machine Removes Labels From Cones

LABELS ARE REMOVED from cones with this machine developed by Burlington Mills Corp. Luther Norton is shown operating the machine at the Butler unit, Burlington Mills Corp., St. Pauls, N. C.

Removing identification labels pasted inside yarn cones is a tedious and time-consuming operation in many mills.

If the labels are allowed to pile up, one upon another, the cone will not set properly and the yarn will not wind evenly. To remove the labels by hand-scraping requires a lot of labor. Many mills have the cone labels removed by an outside company, as Burlington Mills Corp. did before they developed this machine.

Two abraders on this motor-driven machine shred the paper labels on two cones at a time, and air suction draws the shredded paper into a waste receptacle.

Duesberg Does It—
So Can You

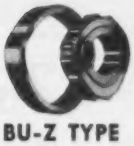
Because it's easier with HYATTS and better, too

The wool card comb box shown below is completely equipped with Hyatt Hy-Load Roller Bearings—proving again that sturdy, precise Hyatts perform satisfactorily on both oscillating and rotating shafts as well as linkages.

In looms and finishing machinery as well as in preparatory equipment, Hyatt Roller Bearings are standard equipment or may be obtained upon specification. Write us for any desired information. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

A-TS TYPE

U-TS TYPE

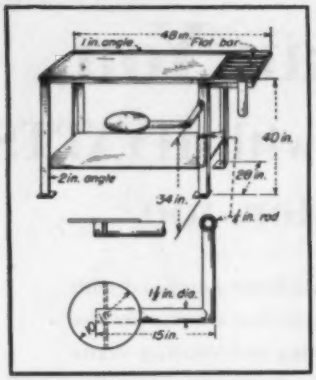


BU-Z TYPE

Wool Card Comb Box made by DUESBERG-BOSSON of AMERICA, INC. 100% HYATT Equipped.

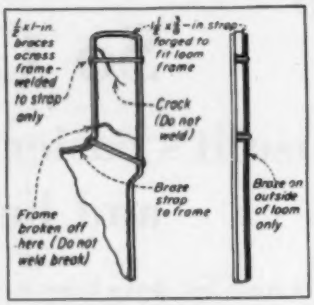
HYATT ROLLER BEARINGS

Welder's Table Has Disappearing Seat



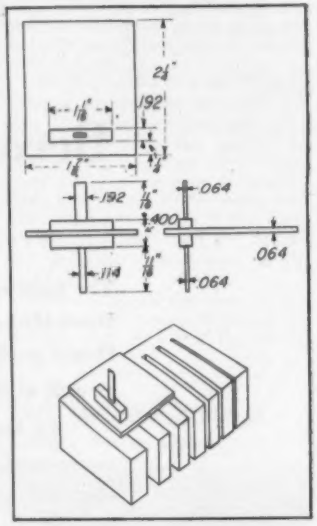
A WELDER'S TABLE can be made as shown here. The two features of the table are a grill at one end for burning and a disappearing seat. The table legs are made of 2-in. angle iron, and the table-top rim is made of 1-in. angle iron. Sheet metal is used for the top and the storage shelf. The Lincoln Electric Co.

Broken Loom Frame Repaired With Steel Strap


⅛ x 1-in. braces across frame - welded to strap only
⅛ x 1½-in. strap forged to fit loom frame
Crack (Do not weld)
Braze strap to frame
Braze on outside of loom only
Frame broken off here (Do not weld break)

LOOM FRAMES crack or break now and then. For ten years I have been repairing these breaks by the method outlined here, and so far I have not had a repeat job. Instead of welding the crack or break in the loom frame, I braze a ⅜x1½-in. steel strap all the way around the part of the frame that broke. Then I brace the frame by brazing crosspieces of ½x1-in. bar stock to the strap on each side of the broken frame. These crosspieces are not brazed to the loom frame. P. J. S. Isherwood, Ontario, Canada.

Gage Checks Calibration Of Uster Testers



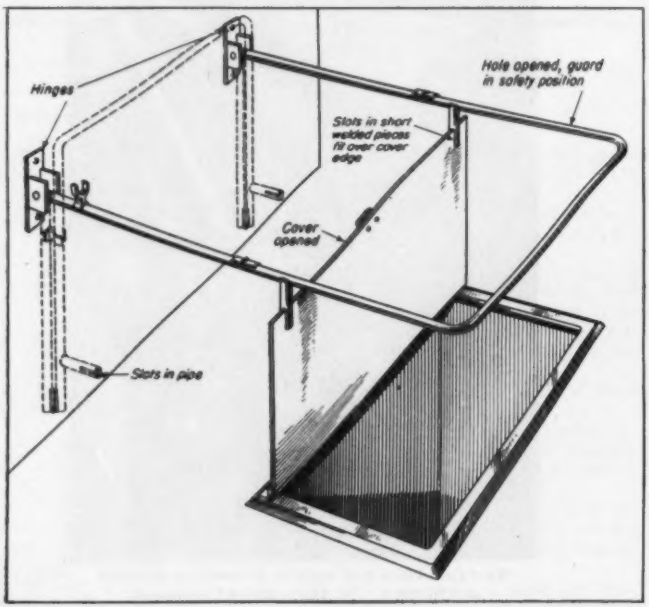
THE CALIBRATION of Uster evenness testers can be checked quickly with this gage. It can be made of any plastic material which is not affected too much by atmospheric conditions.

As an electrical engineer with Uster Corp., I am called out often on service calls to check the calibration of Uster testers. Before I made this gage, it took me a fairly long time to check the calibration.

I made this gage out of lucite plastic, and I can now check a machine within a few minutes to see if it is calibrated correctly. With this particular gage, here is how I check the calibration.

I set the control positions as follows: average value 3.9, with needle on O; range, 50%; and service selector, normal. When I set the controls in these positions and insert the gage in the slot, the reading on the top scale will be 87% if the machine is calibrated correctly. *John R. Carter, Charlotte, N. C.*

Here's a Guard We Made for a Hole in the Floor



STOCK FROM BLENDING BINS at Uxbridge Worsted Co. is dropped through holes in the floor above the card hoppers. The master mechanic at Uxbridge designed this guard made of welded pipe. When the hole cover is down, the guard can be folded up so that it sticks close to the wall. When the hole is open, the guard fits over the bin cover and effectively guards the hole.

Don't Forget!

Watch for the announcement in April of the winner of the $200 Grand Prize in TEXTILE WORLD'S Annual Kink Contest for 1950.

PUT YOUR FOOT DOWN

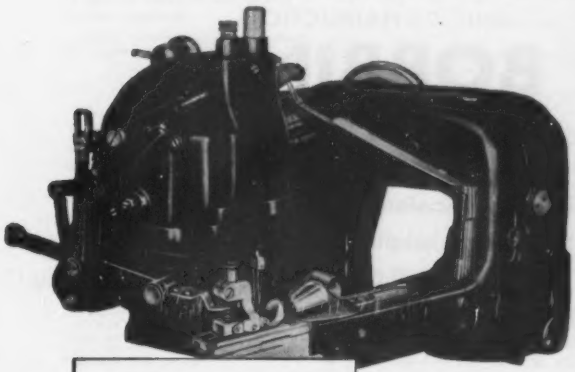
on high production costs

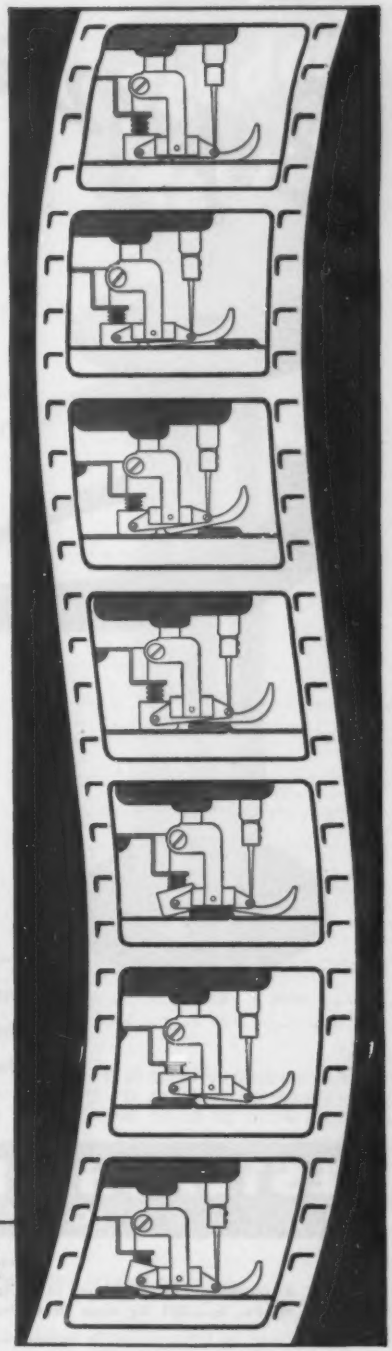
... with the W&G "Feldlock"

DUPLEX FOOT UNIT "walks" easily over bulky cross seams — handles wide range of fabrics, such as medium-weight denims and herringbone twills.

■ The added flexibility of the Duplex Foot makes the Type 700C or 730C "Feldlock" the most *versatile* and *productive* lap seam felling machine ever developed. And because of its smooth running, high-speed operation and remarkable freedom from maintenance, this W&G machine has consistently set the highest standards for sewing economy throughout the garment industry.

Here are just a few of the many other time-saving, money-saving "Feldlock" features: fully automatic lubrication, feed-off-the-arm design, comfortable working position, self-setting needles, pivoted looper holders for simplified threading, and easy accessibility of all parts for cleaning and adjustment.





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Sewing Machine Co.

214 West 39th St., New York 18, N.Y.

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New Dyes & Chemicals
New Useful Accessories
Editorial Articles
and the Advertisements

WRITE ON THIS CARD

. . . to send a Kink, a letter for Round Table, or a news note

. . . to comment on anything appearing in this issue

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Dear Editor MARCH, 1951

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Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for March are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

PROCESS EQUIPMENT

A single-cylinder waste machine is described in a booklet issued by Kirkman & Dixon Machine Shop and Foundry. The waste machine is said to shred waste more completely and with less stoppage than other machines employing two cylinders. **(F-1)**

Oil maintenance, instructions for cleaning systems, and tips on oil-testing and draining are presented in an 18-p. booklet prepared by Sun Oil Co. This pocket-size booklet is aimed to help foremen and operators protect vital equipment, and it includes complete trouble-shooting charts. **(F-2)**

A portable high-vacuum cleaning and stripping system is described in a folder issued by New England Machine Works. The vacuum system is designed to clean weaving and spinning equipment for the cotton, spun-synthetic, and woolen branches of the industry. **(F-3)**

"Hydraulic Fundamentals and Industrial Hydraulic Oils" is the title of a new 44-p. technical bulletin published by Sun Oil Co. The booklet gives fundamental information on hydraulic systems, maintenance, trouble shooting, and selection of proper fluids. **(F-4)**

Steam cleaning is discussed in a folder issued by Oakite Products, Inc. Various models of steam guns are described. The bulletin lists loom heads, slasher drums, spinning frames, and tentering chains among the textile equipment which can be cleaned by the Oakite method. **(F-5)**

"How To Increase Output of Your Dry Cans" is the title of a booklet published by Sarco Co., Inc. This bulletin tells you how to get the best results out of the dry cans you are using. **(F-6)**

A portable cleaner, known as the Hoffco-Vac, is described in a bulletin published by United States Hoffman Machinery Corp. This 1¼-hp. heavy-duty cleaner features four inverted-type filter bags. **(F-7)**

An automatic blower and sweeper—designed for use in spinning, spooler, and twister rooms—and an alley sweeper are described in a folder published by H. E. Clark. The automatic sweeper requires no batteries and is powered from the drive wheels. **(F-8)**

The new "Uni-Pull" drive is described in a folder issued by Atlanta Belting Co. The folder also includes a leather-belting price list and shows how the "Uni-Pull" drive works. **(F-9)**

The control of shrinkage in tubular knit goods is discussed in the December issue of *Proctor Progress*, published by Proctor & Schwartz, Inc. A mechanical system, known as the "Redmanized Shrunk-to-Fit" system, is said to produce fabrics which make true-size garments possible. **(F-10)**

A leather-belting manual, known as the Uni-Pull Drive Manual, has been released by the American Leather Belting Assn. This manual enables the reader to select, without any calculations, the correct belt, pulleys, and motor base for any standard drive. **(F-11)**

Speed control is discussed in a 12-p. bulletin released by Allis-Chalmers Mfg. Co. With the Vari-Pitch drive, speed variation of approximately 2 to 1 is possible with automatic control of the belt tension. **(F-12)**

Industrial ophthalmology is discussed in a report released by the American Academy of Ophthalmology & Otolaryngology. The paper is a preliminary report of progress of the eye program at R. R. Donnelley & Sons. **(F-13)**

A variable-speed drive for spinning frames is featured in a bulletin published by Reeves Pulley Co. The bulletin explains how to keep spinning speeds efficiently controlled under many varying conditions. **(F-14)**

SUPPLIES AND CHEMICALS

"Chemical Research at American Viscose" is the title of a 20-p. booklet prepared by American Viscose Corp. This booklet describes graphically the chemical-research program at America Viscose. **(F-15)**

Bakelite polyethylene resins are featured in a 24-p. booklet published by Bakelite Div., Union Carbide & Carbon Corp. The booklet summarizes the characteristics, development, and latest applications of this flexible, thermoplastic material. **(F-16)**

"Nineet Synthetic Organic Chemicals" is the title of a new 52-p. catalog pub-

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lished by Niacet Chemicals Div., U. S. Vanadium Corp. The catalog presents the physical and chemical properties, latest specifications, applications, and shipping and handling information on the Niacet line of chemicals. **(F-17)**

Industrial glass bearings are featured in a bulletin published by Farley M. Caldwell. These new, metal-backed glass bearings are resistant to acids, abrasives, and alkalis; and are said to have the lowest friction of any known bearing. **(F-18)**

An acid- and alkali-resistant coating, Nukemite, is featured in a bulletin published by Nukem Products Corp. Nukemite affords protection from severe corrosive conditions for metal, concrete, and wood surfaces exposed to chemical attack. **(F-19)**

A ball-bearing catalog for engineers has been released by New Departure Div., General Motors Corp. This new catalog, the 20th edition, features selection of bearing types; and includes load-rating tables and several new types of angular contact bearings. **(F-20)**

"Walkie"-type batteries are featured in nine new specification sheets prepared by Gould-National Batteries, Inc. These sheets cover batteries for electric hand trucks made by nine manufacturers; and they contain recommendations for the battery types in light, normal, and heavy use. **(F-21)**

Two new chemicals, 12-hydroxystearic acid and hydrogenated *castor oil*, manufactured by Emery Industries, Inc., are described in a bulletin published by that firm. The bulletin contains complete specifications, physical characteristics, and suggested usage of these items. **(F-22)**

"Properties of Flammable Liquids, Gases and Solids" is the title of a new edition of a booklet published by Factory Mutual Engineering Div. This booklet contains a table covering more than 650 flammable materials found in industrial plants. **(F-23)**

Lock nuts and lockwashers are featured in a catalog published by Link-Belt Co. The catalog describes and gives complete specifications of the company line of locknuts and lockwashers. **(F-24)**

Water hardness is discussed in a bulletin published by Hall Laboratories, Inc. Featured is a new one-minute test for determining water hardness; and procedures, reagents, and equipment for the new test are described. **(F-25)**

CONTROL EQUIPMENT

Hypersonic equipment is discussed in a bulletin published by Brush Development Co. Brush Hypersonic equipment permits the testing of ultrasonic energy as a technique in processing products, without the necessity of larger, more costly apparatus. **(F-26)**

The CSI-Stoll Quartermaster universal wear tester is described in a booklet published by Custom Scientific Instruments, Inc. This tester is a multipurpose instrument for measuring resistance to surface abrasion, edge abrasion, and flexing of textile materials and of many other products. **(F-27)**

An electronic positioning control for use with U. S. Varidrive motors is described in a bulletin published by U. S. Electrical Motors Inc. The control unit automatically changes motor speeds and is designed for applications requiring very accurate speed control or close following of a device, such as a floater or tension control. **(F-28)**

A pressure regulator designed for use on slasher squeeze rolls is featured in a bulletin issued by Norcross Corp. The new Norcross pressure regulator is said to insure proper roll alignment and the correct roll pressures necessary for maintaining the best size content and penetration. **(F-29)**

Eddy-current couplings are featured in a booklet published by Dynamatic Corp. These water-cooled electro-magnetic couplings are designed for adjustable-speed drives from alternating current. **(F-30)**

An outdoor control for hot water- and radiant-heating systems is described in

SARAN LINED steel pipe

WHAT part of industry's six billion dollar corrosion bill are you paying. Any amount is too much and can be cut considerably through the installation of saran lined steel pipe. You will find, as have many of the country's leading manufacturers, that saran lined steel pipe means dependable, long term operation. In addition to the excellent corrosion resistance of this remarkable pipe —you have the plus values of rigidity, pressure strength and ease of installation, requiring NO special tools. These advantages are all important to you in the reduction of shut-down time, lost production and equipment replacement.

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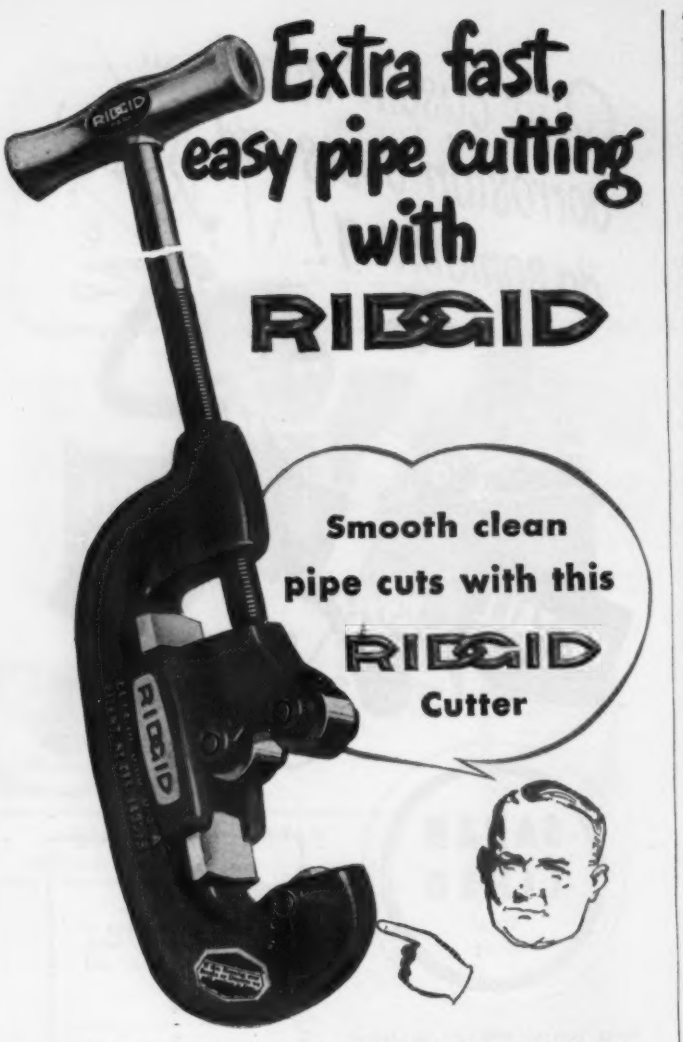

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★ Work-Saver Pipe Tools ★

a bulletin published by Sarcotherm Controls, Inc. The Sarcotherm type-AO compensating outdoor control is designed to modulate circulating-water temperature in the system in accordance with changes in outdoor temperature. **(F-31)**

Optical comparators are featured in a catalog published by Engineers' Specialties Div., Universal Engraving & Colorplate Co., Inc. This 44-p. booklet describes methods of inspection by optical projection, and presents equipment and accessories with the aid of colored illustrations. **(F-32)**

Indicating and recording electronic instruments are described in a bulletin published by The Bristol Co. The description of the new series-500 strip-chart line of Dynamaster electronic instruments includes various models and reproductions of chart records, schematic drawings, and photographs of actual installations. **(F-33)**

A replaceable-type air filter is described in a bulletin published by American Air Filter Co., Inc. The air filter, known as the Amer-glas filter, is replaceable and is of the viscous-impingement type for use in forced warm-air-heating systems, packaged-unit air conditioners, and small central systems. **(F-34)**

Speed control is discussed in a new bulletin issued by Reeves Pulley Co. The bulletin describes the three basic units of the Reeves line: the variable-speed transmission, the Reeves Motordrive, and the Vari-speed motor pulley. **(F-35)**

File simplification is discussed in a new 40-p. booklet released by Remington Rand, Inc. The emphasis in the booklet is in the simplicity and convenience of accurate filing made easy with an accurate filing system. **(F-36)**

Compressed air regulation and control is featured in a bulletin issued by Air Products Co. This bulletin describes air filters, filter-lubes, after-coolers, air regulators, and de-humidifiers for efficient performance of compressed air. **(F-37)**

ENGINEERING DATA

Fires from atomic bombing are discussed in the December issue of *Factory Mutual Record* published by Factory Mutual Engineering Div. The article features industrial defense against such fires and outlines considerations in planning fire defense. **(F-38)**

Three-dimensional planning for making plant layouts is described in a folder issued by "Visual" Planning Equipment Co., Inc. In the "Visual" planning system, models of machines and equipment are used to make a plant layout, instead of blueprints or templates. **(F-39)**

Powered hand trucks are featured in a booklet issued by Clark Equipment Co. This 12-p. two-color booklet devotes separate sections to each of the power types, and contains complete data on each of the units. **(F-40)**

A building-maintenance checking chart has been published by United Laboratories, Inc. Listed are many common building-maintenance problems, with a solution for each. **(F-41)**

Materials-handling equipment is featured in a catalog published by Fiber Specialty Mfg. Co. The catalog illustrates and describes trucks, boxes, and cans for general and specialized uses in textile plants. **(F-42)**

Steel-product engineering is discussed in a booklet published by Atlantic Steel Co. The services offered by the product-engineering department of this company include design, metal fabrication, and metallurgical analyses. **(F-43)**

A new lift-truck equipment item, the Load-Grab, is described in a bulletin published by Hyster Co. This equipment has special arms for specific jobs and comes in two models: model "20" for capacity of 1,780 lb., and model "40" for capacity of 3,350 lb. **(F-44)**

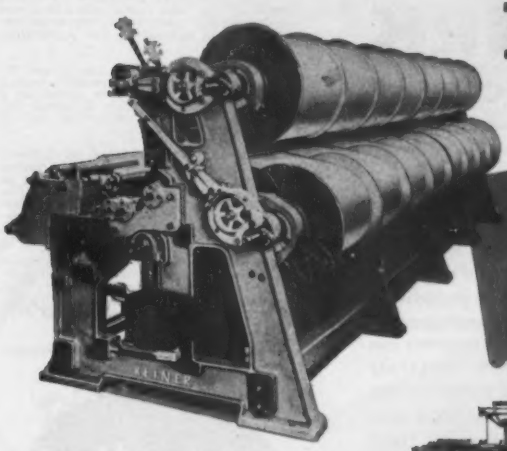
Footing for slippery floors is featured in a bulletin published by Minnesota Mining & Mfg. Co. A mineral-coated fabric, Safety-Walk, is designed for any in-

in **ACTION** — at the KNITTING ARTS EXHIBITION

Mill-Proved

REINER MACHINES

DEPENDABILITY
QUALITY — SPEED
VERSATILITY — ECONOMY

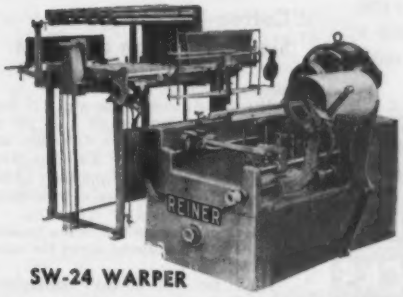


TRICOT MACHINE 168"

The most versatile machine of its kind. 2 or 3 bar—chain link or pattern wheel drive—long needle, heavy duty models for coarse gauge material—available in 168" and 84" widths—gauges from 14 to 32—positive cloth take-up—automatic oil feed lines throughout—many other features. Since 1945 over 750 of these machines have been installed in mills all over the world.

TWIN KNITTER

Available up to 66 gauge. For finest gauges the Reiner Twin Knitter is the answer—it produces unexcelled full fashioned stockings in many mills—suitable for all types of operations, for any needed quantities—attachments are available for perforation, ringless, fancy, and colored heels—up to 8 carriers—needle bar 15" wide—machines are delivered fully assembled—need no air conditioning for their operation.



SW-24 WARPER

The SW-24 Sectional Warping Machine is built to warp nylon, filament rayon, spun rayon, cotton, wool, worsted, etc. It takes spools up to 24" in length with flange diameters up to 24". Adaptable to multiple spools for the milanese and narrow fabrics trades. We offer all types of beamers and warpers.

Other Reiner Machines

Simplex (Double Knit) Machines—Kayloom Machines—Raschel Machines—Magazine Creels—Single Type Creels—Truck Creels—All types of Beamers and Warpers—Automatic Schiffli Embroidery Machines (10 and 15 yards)—Bobbin Winding Machines (for Stitching and Quilting).

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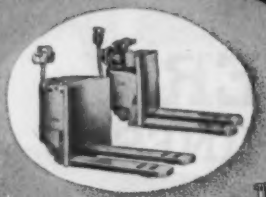

STEADILY RISING COSTS—growing user demands—imminent labor shortages! These very real conditions need not pose frightening problems to alert and able management.

Given proper machines, manpower can deliver a great deal *more* power—and enjoy doing it; more power that translates into greater production at lower cost.

Now that CLARK has added Powered Hand Trucks to its *Leadership Line* of Fork Lift Trucks and Industrial Towing Tractors, it is better fitted than ever before to help Management meet the challenges of a most critical era. For it is in the field of Materials Handling that the greatest opportunities for savings, for increased production, for improved efficiency and for the betterment of employee relations are to be found.

In every piece of CLARK materials-handling equipment, there is MORE POWER FOR MANPOWER. And it is yours to employ—yours to enjoy.

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AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

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dustry with a slippery floor or walkway. **(F-45)**

Equipment for vertical movement in both storage and production operations is described in a bulletin published by Lewis-Shepard Products, Inc. The bulletin illustrates and describes the Lewis-Shepard line of stackers, handy hoisters, portable cranes, and working-height lifters. **(F-46)**

Dry-chemical fire extinguishers are featured in a bulletin published by Ansul Chemical Co. The Ansul piped systems are designed to provide dry-chemical application for automatic fire protection. **(F-47)**

An electric pallet truck, the model W, is described in an 18-p. booklet issued by Towmotor Corp. This truck is a pallet-type unit specially designed for handling pallet-loads weighing up to 4,000 lb. **(F-48)**

A motor starter for 2,300 to 5,000-v. squirrel-cage, wound-rotor, synchronous and multi-speed motors is described in a bulletin issued by Allis-Chalmers. The starters are built for full voltage or reduced voltage, reversing or non-reversing, with plugging, dynamic braking, and multi-speed features. **(F-49)**

Fractional-horsepower variable-speed motors are described in a bulletin published by U. S. Electrical Motors, Inc. These motors have a 10-to-1 speed range, running from 4 to 10,000 rpm. **(F-50)**

Questions AND Answers

Cotton-Viscose Goods Sized as Cotton or Rayon

Technical Editor:

We weave a cloth made with 127 ends per in. of 40s warp and 68 picks per in. of 42s filling. It is woven with eight harnesses in a plain weave. The yarn, warp and filling, is a blend of one-third 1¾-in., 1.5-den. bright viscose rayon and two-thirds 1¼-in. combed cotton.

We slash the warp with a size formula used on cotton warps of about the same construction.

From the wet finisher's standpoint, would it be better to use a rayon size formula or modify our present formula to some point between a cotton formula and a rayon formula? (9420)

Since you are slashing a combed-cotton and viscose-rayon warp and most likely are using a light size, we do not think it particularly important that your size be changed from a cotton to a rayon formula. It would depend on whether you are using a

CUT Plant Rearrangement Costs

with

SQUARE D's PLUG-IN DUCT

Production capability of the modern plant is directly related to arrangement of machinery and equipment. Rearrangement may be necessary to take full advantage of an improved process or to permit economical manufacture of a new product.

PLUG-IN DUCT can be installed with a minimum of delay and expense near ceilings, along walls, or directly above machinery to provide power where it is needed. It replaces the more conventional panelboards, which have conduit-enclosed feeders, typical of less modern installations.

Write **for Bulletin 5600. Address Square D Company, 6060 Rivard Street, Detroit 11, Mich. Or call your nearby Square D Field Engineer for help in laying out your duct system.**

GET THESE FEATURES

Round Copper Bus Bars provide greater mechanical strength and resistance to short-circuit stresses. Supports are non-carbonizing porcelain.

Plug-In Units of either circuit breaker or fusible switch types are easily installed at 2-foot intervals along both sides of the duct. Plug-in stabs grip the round bus bars with exceptionally high pressure. A hook-type bracket permits rotation of the unit into place. A single clamp screw at bottom holds it there.

Hanger Brackets of heavy gauge steel are two-piece construction to facilitate assembly around duct enclosure. They are suitable for either edgewise or flat mounting of duct structure.

Flexible Connectors of laminated copper join bus bars between sections to provide for expansion and contraction, permit proper alignment and insure tight joints. All bolt heads face outward.

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Write for Bulletin 450

Parks-Cramer Company

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Questions and Answers

thick-boiling or a modified starch in your present size and whether the goods are going to a cotton finisher or a rayon finisher, or both.

Thin-boiling starches in a light size could very likely be removed satisfactorily and cleanly, whether the goods were to be prepared by the cotton system or on rayon equipment. Goods of this type could be handled, with certain modifications, the same way as an all-cotton fabric. They could be prepared, dyed, and finished in a cotton-finishing plant.

If the cloth is being shipped to rayon finishers, it possibly would be desirable to modify the size formula somewhat. There are several highly converted starch products on the market that are being used satisfactorily for slashing fabrics of all-rayon construction. These products are much more readily removed in the rayon boil-off operation than are thin-boiling and thick-boiling starches.

These last two types are favored in the slashing of all-cotton warps and usually require either an enzyme treatment or a more severe boil-off than is given to fabrics made of all rayon.

The Difference Between Dupion and Shantung Silk

Technical Editor:

What is the difference between dupion and shantung silk?

Can you tell me how to figure the denier or size of the two yarns?

I analyzed a sample of cloth that had dupion filling in the same way that we analyze crepes, satins, etc. I took the weight of 400 in. of straightened yarn with the twist taken out. The yarn size figured 57 den.+57 den.+57 den. = 171 den., with 3 tpi. *S* twist.

This size seems high when the lumps in the yarn are not considered.

Should the heavy parts of the yarn be taken into consideration? (9419)

Dupion is a Japanese silk reeled from doubled silk cocoons. Sometimes two silkworms are so close together as they spin their cocoons that the silk filaments ejected are interlaced with each other. A double cocoon results. Such a cocoon is known as a dupion. When the silk is reeled from the cocoon it is coarse and irregular. It is used for coarse fabrics and novelty yarns.

Something like 7% of Japan's silk crop is of this type.

Shantung usually is applied to a type of fabric rather than to a particular type of silk. The name comes from the Shantung province of China,

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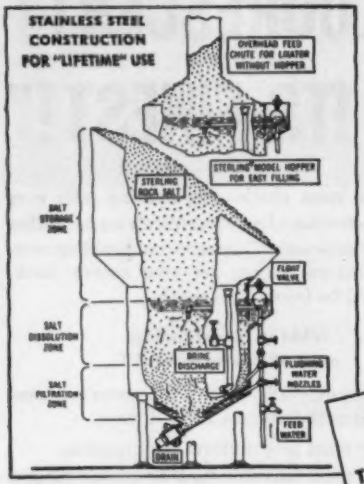

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Savings up to 20% and often more in the cost and handling of salt have been reported by many Lixate users. Why not investigate?

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• The Lixator *automatically* produces 100% saturated, free flowing, crystal-clear brine — which may be piped to as many points in your plant as you desire — any distance away — by either gravity or pump. YOU SIMPLY TURN A VALVE for self-filtered, LIXATE Brine that meets the most exacting chemical and bacterial standards.

An INTERNATIONAL Exclusive

The LIXATE* Process

FOR MAKING BRINE

*REG. U. S. PAT. OFF.

INTERNATIONAL SALT COMPANY, INC. Scranton, Pa.

Questions AND Answers

(Continued)

where shantung cloth is most prevalent and where the fabric probably originated.

It is a pongee, woven plain in a light or medium weight. In China, the fabric is woven on handlooms from silk obtained from wild cocoons. The yarn is used in its raw state, which gives the fabric a dull, wild-silk color. The finer, smoother yarns are used for the warp and the coarser, slubbier yarns for the filling.

The effect is a strong cross-ribbed appearance, with nubs (or knots) of yarn scattered fillingwise throughout.

Shantung yarn is easy to duplicate mechanically on a spinning, roving or drawing frame. Usually, in the mill it is called "nubby" yarn.

The denier size of the two silk yarns is calculated in the conventional manner. The slubs or thick places in the yarn must be accepted in figuring the yarn count. The standard for calculating the denier size of silk yarn is 4,464,528 yd. per lb. of 1-den. silk.

If either the dupion or shantung yarn is spun silk, the count or denier size is figured on the cotton basis (840 yd. per lb. of number is cotton).

The "ounce" system has often been used where thick counts of yarn are employed. It is based on the weight in ounces of a 1,000-yd. hank. However, today this system of numbering is seldom used.

Full-Fashioned Machine Kept Free of Dry Size

Technical Editor:

We are not satisfied with our present cleaning of full-fashioned machines for removing size, surface rust, etc., from the shafts and rods of the machines.

Can you outline a good method for us? (9421)

The first requisite is a good cleaning solution. There are several on the market.

During the knitting of the welt, apply some of the solution with a brush to keep the sizing loose and the sinkers and dividers clean. At least every three weeks clean out the knock-over bit bars with a transfer bar or some other object that will remove the accumulated sizing between the bit bars and the sinker heads.

The cleaning solution should also be appplied with a brush to picot bars, narrowing points, and welt bars.

The use of emery cloth to remove rust and discoloration from shafting is a bad practice. The abrasive cuts through the polish of the shaft and

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Samples from our file will be sent free on request. Samples hand made to your specifications can be furnished at reasonable cost.

AlSiMag Condensers are made in two materials, AlSiMag 192 (8 on Mohs' scale) and AlSiMag 491 (9 on Mohs' scale). • AlSiMag 192 Condensers are less expensive and in most cases will fully meet requirements of rayon, nylon, cotton and wool yarns. • AlSiMag 491 Condensers are indicated for unusually abrasive processes. 491 Condensers are widely and successfully used in processing jute, paper, fibre glass and monofilaments. • In either 192 or 491, hole sizes can be economically maintained within ± 0.001" in holes larger than 0.0625" diameter and not more than 0.375" in length. All AlSiMag guides are custom made.

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Notice: This system is covered by both process and machinery patents and patents pending.

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Questions and Answers

(Continued)

makes it more susceptible to rust. Probably the best thing to use on the shafting is one of the new-type metallic cloths now on the market. This type of cloth will remove discoloration, but it is not abrasive enough to damage the polished surface of the shafting.

Rubber-Yarn Stretch Varies Considerably

Technical Editor:

We have just started running elastic yarns, and we're having trouble with variations in the stretch of the yarns. Our supplier says that it is normal, but it seems quite excessive to us. We find such stretch as 85%, 110%, and even over 200%.

We're making elastic belts, and we don't seem to have enough control over the widths because the yarn varies so much.

Do you have any suggestions? (9417)

Considerable stretch variation seems to be more or less normal for elastic yarns. If you buy yarn with 110% stretch, for example, you will find astonishing variations both below and above 110%. The stretch may be quite different from cone to cone and also from place to place on the same cone.

About the only way to maintain anything like constant stretch is to check the stretch quite frequently. Cones with approximately the same stretch should be used together, and checks should be made at regular intervals to see if a particular cone should be replaced.

Generally, about 10% difference in stretch should be the tolerance. For example, if you're running yarn with a stretch of 110%, you should not run in the same fabric yarns with less than 100% or more than 110% stretch.

Zinc Silicofluoride As Neutralizing Agent

Technical Editor:

For what purpose is zinc silicofluoride used in the textile industry? (9418)

We understand that zinc silicofluoride is being used to some extent as a neutralizing agent or sour, but it has little or no iron-removing action. Due to the fact that the zinc salt has six waters of crystallization, it has lower neutralizing value than the other fluosilicates such as sodium or ammonium; but it is apparently preferred because it imparts a softer handle to the fabric. (The improved

handle to the fabric. (The improved handle is probably due to a reaction between the zinc and traces of soap left in the fabric.)

None of the fluosilicates, including ammonium and sodium, are particularly good for removing iron stains. The bifluorides, such as sodium bifluoride and ammonium bifluoride, are preferred for this purpose.

The fluosilicates, particularly the zinc salt, are good mothproofing agents. We understand that zinc fluosilicate is being used in some woolen mills for the dual purpose of neutralizing alkalinity after scouring and mothproofing.

Fluosilicates are being used in some instances as a substitute for other mineral acids in the dye bath. Their chief advantage on cotton would be the fact that they do not lower the tensile strength. However, the cost of using a fluosilicate for this purpose would be great.

Shady Twill Fabric Caused by Whiproll

Technical Editor:

We are enclosing a sample of a fabric that we have been making in a 2-up-1-down twill, nine ends right and nine ends left herringbone weave. You will note on one side of the cloth that on about half the piece the left twill in the herringbone shows more prominently than the right twill. On the other side of the piece this condition does not seem to hold true.

Can you explain the cause of this defect? (9422)

The cloth seems to be shaded—a condition that may cause the twill lines to be more pronounced on one side. There are a number of things that could cause this trouble, but in this case the most likely one seems to be improper adjustment of the loom whiproll or uneven shearing.

On this particular fabric, where the warp is darker than the filling, any condition that allows more warp than filling to show on the face will naturally cause a shaded condition. If the loom whiproll is not level with the breast beam, the high side will cause a loose top shed. In weaving, more warp will show on the face of the fabric, causing a dark shade on one side.

Looms should be checked by using a straightedge and a level from the whiproll and the breast beam of the loom. Also, the race plate of the lay should be $\frac{1}{64}$ in. lower than the breast beam and perfectly level. Sometimes the lay sword loosens up at the foot

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As you plan ahead to the possibility of more and more defense contracts—take a healthy look at your card room. Ask a Proctor representative to show you figures on the production records of Proctor cards . . . and to interpret those figures in terms of your individual operation.

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Questions and Answers

(Continued)

and raises or lowers the lay at one end and causes uneven tension on one side of the warp.

A shear out of adjustment would also cause a shade condition in a fabric of this type. Running the goods through the shear two times and reversing the sides would even up any misadjustments.

In the sample you sent, the selvages are rolled. If rolled selvages are troublesome, using a 2-and-2 basket weave for the listing may help correct that condition.

Rayon Twist Is Lost When Z Twist Is Inserted

Technical Editor:

In twisting filament rayon yarn, why do you have more yards per pound when you insert *Z* twist than when you insert *S* twist?

For example, we recently twisted some rayon with 60 turns *S* and some with 60 turns *Z*. We found that we had about 0.5% more yards per pound on every package of *Z*-twist yarn than on S-twist. (9416)

Rayon filament yarn has about three turns of *S* twist when you receive it from the supplier. If you insert 60 tpi. of Z twist, you lose 3 tpi. because the first three turns only take out the *S* twist already in the yarn. You wind up with 57 tpi. instead of 60.

When you insert *S* twist, you gain the 3 tpi. already in the yarn. You then have 63 tpi. of S twist instead of the 60 you've put in.

Mill Maintenance

Manpower Shortage Calls For Good Maintenance

In the face of the impending manpower shortage, preventive maintenance assumes a top roll in the industry. At the Conference on Plant Maintenance held in Cleveland in January, L. C. Morrow, general chairman, who is consulting editor of *Factory Management and Maintenance*, said that United States industry will be short at least 1,000,000 men by the end of 1951.

He said that the shortage may run as high as 10,000,000 if all-out war develops. Mr. Morrow based the anticipated shortage of one million men on the expected defense production

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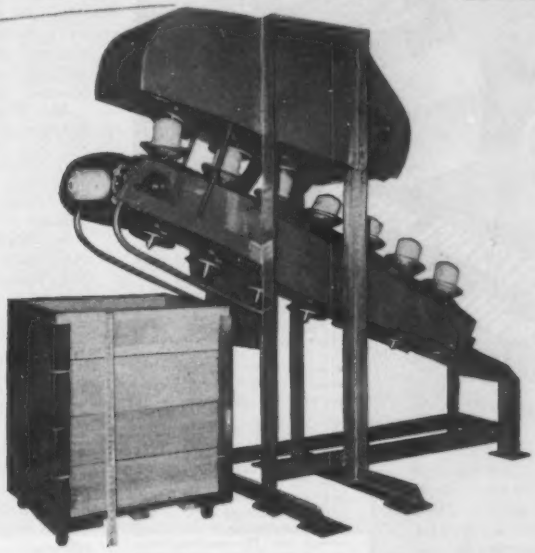

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Now you can form and condition yarn packages for dyeing 7 to 10 times faster than ever before—*and get surer results at the same time*—with Gaston County's new mass-production conveyor-type yarn shaping machine.

Yarn packages are shaped automatically by continuously-moving cups to remove the square hard edges at both ends. Gentle, adjustable squeezing action gives the yarn uniform density throughout. As a result you get smooth, even penetration of dyestuff in every package, particularly helpful in dyeing critical shades.

Your saving in labor costs alone justify installation of this new equipment. Packages are formed at a rate of 3,000 or more per hour, then conveniently deposited for loading on dye carriers. There's no unloading delay, no fumbling with complicated gadgets. Handy position of conveyor cuts loading time to a minimum. Rate of production is limited only to speed of operator. Tube damage is eliminated.

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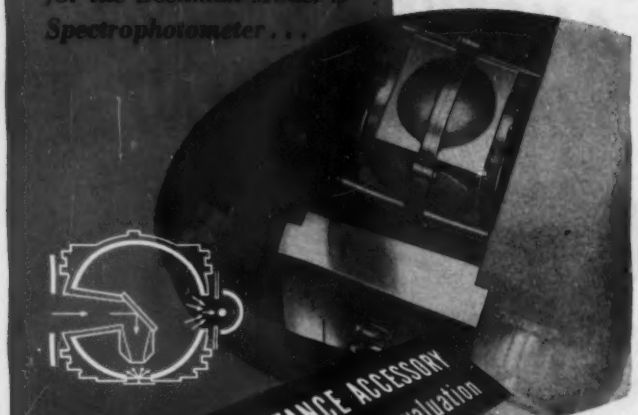

A NEW REFLECTANCE ACCESSORY that simplifies color evaluation

To further increase the wide range versatility of the well-known Beckman Model B Spectrophotometer, a new Reflectance Accessory is now available for use on opaque, colored samples in solid, liquid or powder form. There are many useful applications for this accessory in the precise evaluation and comparison of color intensities and hues.

For example, diffuse reflectance measurements are useful for accurately controlling the whiteness of talc . . . for controlling artificial coloring of foodstuffs such as butter, catsup, and condensed milk . . . for calculation of dye bath recipes in textile processing . . . for grading the color of paper and the whiteness of flour . . . for matching and controlling shades of powder, rouge and lipstick, paints and inks and many other products where accurate color measurements are essential.

SEND FOR NEW BULLETIN

Important features of this new Reflectance Accessory are outlined at right. A bulletin describing the unit in greater detail will gladly be sent. Ask your nearest Beckman Instrument dealer for Bulletin #235—or write direct.

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The attachment consists of an integrating sphere in holder and a sliding sample tray which are easily installed in place of the standard Model B sample compartment and cell carriage.

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To permit utmost measurement precision, a detent mechanism operated by a convenient push button in the sample tray knob exactly reproduces forward and backward position of the sliding sample tray. The resulting precision is particularly valuable for accurate measurements on samples with rough surfaces or non-homogenous colors.

Readings taken rapidly are reproducible to at least 1%—with careful technique even greater precision is obtained.

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Special provision has been made so that liquid samples can be conveniently inserted without spilling . . . powdered samples without disturbing the smoothed surface.

Sample Size

Sample size is approximately 1" x 1 1/4" with a maximum thickness of 5/16"—ample for most applications. Or, by simply rotating the sphere 180° in its holder, larger samples can easily be accommodated.

Quick, Easy Readings

Accurate color measurements are made with great speed and simplicity. First the instrument is adjusted to read 100% reflectance on a white standard (such as MgO), the sample is moved into position and the percent reflectance (compared to the standard) is then read directly from the meter. It's as simple as that—and the three-compartment sample tray permits quick comparison of two samples and a standard on each run.

of $24,000,000, with allowance for cutbacks in production goods.

Here's why good maintenance is so important in the face of this manpower shortage. New machines will become increasingly hard to obtain. Work loads will have to be increased, because there will not be enough manpower to go around.

Only by keeping existing machines in top operating condition and by uninterrupted services such as power, light, air conditioning, lubrication, and housekeeping can industry prevent wastage of productive man hours through breakdown and spoilage, Mr. Morrow told the conference.

Mr. Morrow offered this six-point program for industry:

1. Organization of maintenance personnel.
2. Determination of maintenance policies.
3. Definition and assignment of maintenance duties.
4. Training of maintenance personnel.
5. Planning and scheduling of maintenance work.
6. Administration of maintenance personnel.

Basically, the machines will have to be kept-up better than before, with less personnel to do the jobs. The maintenance crews themselves must be organized well, and each man must have specific duties. Only in this way can we hope to keep running at peak efficiency.

Operating employees—frame tenders, weavers, etc.—must be trained to do their share of housekeeping and to help keep the machines in good condition. They should also be instructed to call the fixer when a part appears to be wearing excessively, or if the machine is not operating properly.

For the long pull, preventive maintenance must be practiced; and the program must have cooperation of supervisory personnel and employees on all levels.

Answers to Textile Quiz

on page 176.

1. d. [TW, Jan., '51, p. 100]
2. b. [TW, Jan., '51, p. 102]
3. a. [TW, Jan., '51, p. 104]
4. c. [TW, Jan., '51, p. 106]
5. d. [TW, Jan., '51, p. 108]
6. e. [TW, Jan., '51, p. 105]
7. a. [TW, Jan., '51, p. 110]
8. b. [TW, Jan., '51, p. 112]
9. a. [TW, Jan., '51, p. 116]
10. d. [TW, Jan., '51, p. 134]

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the *NEW* Hunter

open-width Compartment washer

What would you like for an Open-Width Compartment Washer? Hunter has it, because the specifications of this new machine were suggested by practical mill men. Its rugged construction, accessibility, ease of maintenance, and adaptability to changes in fabric and routine make it the finest Compartment Washer available. The photo shows 2-yard-per-pound cotton print being soaped and rinsed at 125 yards per minute at The United States Finishing Company's main plant in Norwich, Connecticut.

Each tank includes stainless steel bottom and rubber covered top nip rolls with stainless steel idler rolls at the top and specially constructed reels in the bottom to help the scouring action and loosen the gum. All rolls are mounted on separate frames, and any part can be removed without the disassembly of other parts.

The new Hunter Washer is the perfect production tool for soaping, oxidizing, desizing, washing, etc. Complete details to cover your own requirements are yours for the asking.

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Because Conventional spindles with Regnery Adapters balance out any other paper tube spinning in the mill.

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2. A smoother spinning unit.
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Books of Interest

Monograph Covers Balance Use and Care

THE ANALYTICAL BALANCE, Its Care and Use by William Marshall MacNevin; Handbook Publishers, Inc., Sandusky, Ohio; cloth, 73 pages, $1.50.

This monograph provides practical information on the care and use of modern analytical balances. Selecting, mounting, cleaning, adjusting, testing, and repairing of balances are some of the subjects covered for the benefit of laboratory workers and others who may have had little or no training in the use of balances. For the more advanced technician, a section on testing balances for performance characteristics will aid in obtaining improved performance in day-to-day balance work.

Dictionary of Weaves For Designing of Fabrics

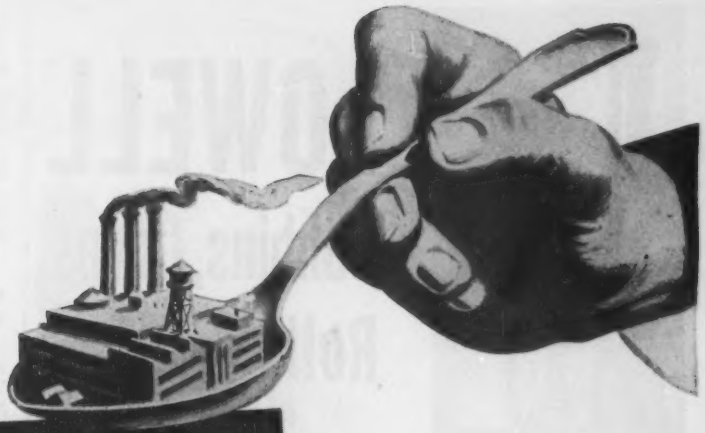
HANDBOOK OF WEAVES by Oelsner and Dale; Dover Publications, Inc., 1780 Broadway, New York 19; cloth, 402 pages, $7.50.

To anyone concerned with the design of fabrics, the construction of the cloth is, of course, of prime importance. This 6x9-in. unabridged reprint of an old standby in fabric design contains 1,875 illustrations. The new edition is limited to 1,150 copies. The field of design is covered from simple drafts and plain weaves to the more complicated fancy weaves like crêpes, twills, and tricots. There is a chapter on the analyzing of fabrics and weaves from a simple swatch, and another on arranging yarns in contrasting colors and on the production of special effects through weave-and-color combinations in the same fabric.

Single Volume Surveys 1949 Textile Progress

REVIEW OF TEXTILE PROGRESS by The Textile Institute, 16 St. Mary's Parsonage, Manchester 3, England, and The Society of Dryers & Colourists, 32-34 Piccadilly, Bradford, England; cloth, 403 pages.

This Vol. I, 1949, in a series of annual reviews of world-wide progress in the textile industry is an excellent reference for one who desires a quick survey of projects undertaken by the industry and written up



The proof of the pudding

Yes, the proof of the pudding lies in the eating. Sounds trite, but its truth is undeniable.

The Seaboard Southeast is *proven* ground for textiles. Numerous mills operating profitably in this section attest to that fact. All branches of the industry are represented – cotton, woolen, rayon and other synthetic fibres.

Seaboard's Industrial Department has assisted many of the nation's outstanding companies in finding just the right locations for their plants. There are still many communities in this area where the labor supply is virtually untouched.

Let us submit recommendations based on your specific requirements. No obligation or cost. All negotiations confidential.

Write: Warren T. White, Assistant Vice President,
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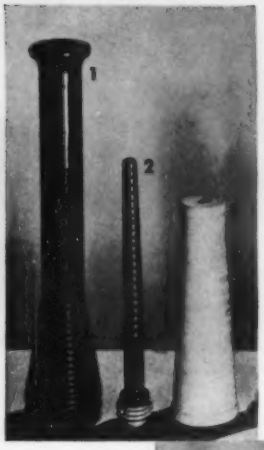

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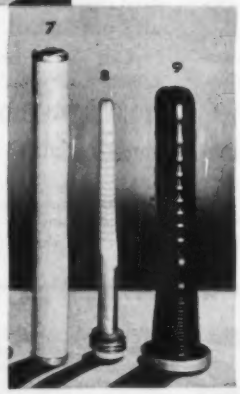
Bobbins, Cones Rolls & Tubes

1 Ring spinning bobbin
2 Automatic loom bobbin
3 Winder cone
4 Worsted twister bobbin
5 Winder tube
6 Bobbin for non-automatic loom with electric feeler motion
7 Warp spinning tube
8 Automatic loom bobbin for electric feeler motion
9 Worsted spinning bobbin

Lowell bobbins, cones, rolls and tubes are made from maple, birch or beech wood, as required. All wood is thoroughly seasoned, air dried and properly cured in a modern dry kiln. Bobbins are finished with oil, lacquer, shellac or enamel (baked on) as specified. Inspection is rigid and only perfect products are passed for shipment.



MAY WE QUOTE ON YOUR REQUIREMENTS?

LOWELL SHUTTLE COMPANY
Established 1896 • Incorporated 1914
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Hendrik Van Brederode, 311 Godwin Ave., Midland Park, N. J.; W. P. Russell, P. O. Box 778, Atlanta, Ga.; West Philadelphia Supply Co., Emerald and Somerset Sts., Philadelphia, Pa.; E. B. Smith, P. O. Box 3085, Greenville, S. C.

in textile journals during 1949. Anyone new to a particular field, for example, can refer to topic headings and to the well arranged indexes of both subjects and authors to bring himself up to date on what has been described in that line during the year. General headings include physics and chemistry of fibrous materials, fiber production, finished yarns, fabrics, coloring materials, dyeing of textiles, finishing, analysis, testing, grading, defects, laundering, dry cleaning, building, and engineering.

Letting Employees Know Benefits To Expect

YOUR SOCIAL SECURITY BENEFITS, 1950-1951 Edition by Commodity Research Bureau, Inc., 82 Beaver St., New York 5; paper, 32 pages, (under 50 copies) 25¢ ea., (50 to 249 copies) 20¢ ea., (1,000 to 2,499 copies) 15¢ ea.

Many American employees are unfamiliar with the new Social Security benefits that have been in effect since January. To fill an obvious need, this handbook has been gotten out for distribution among industrial employees, including textile workers. Subjects covered include general information on Social Security payments, what a worker and his family gets, how old-age benefits are determined, what survivors get, how one becomes eligible for old-age and survivors-insurance benefits, the status of women under the Social Security Act, how to claim benefits, and unemployment insurance. A lower price per booklet can be obtained for mills needing 2,500 copies or more for their employees.

Background Material For Over-all Planning

SOURCES OF ECONOMIC INFORMATION FOR COLLECTIVE BARGAINING, Research Report No. 17, by Ernest Dale; American Management Association, 330 West 42nd St., New York 18; paper, 171 pages, $3.75.

During the past 10 years a large amount of data bearing on general wage rates have been developed, not only by government agencies but also by research departments of both management and labor organizations. This particular study examines the record of factual information now available to negotiators and arbitrators seeking a more pragmatic approach to wage setting. Analyzed in the discussion are the four criteria most commonly used in the determination of wage rates: the cost of living, productivity, "going" wage rates, and "ability to pay." The booklet concludes on the theme that the criteria are "a framework of negotiation and a basis for argument more rational than brute force," but that they have not yet been developed to a point where they provide any "one right way" of setting wages.

PERSONNEL PROBLEMS UNDER MOBILIZATION, Personnel Series No. 135, papers compiled by American Man-

YOU CAN TEACH AN OLD TEXTILE NEW TRICKS!

Old or new, textiles can be made to perform better, serve longer, with the help of Stein Hall products. Our laboratory technicians continually scrutinize the textile industry, searching for new ways to improve our products for warp sizing, printing, and finishing fabrics.

Stein Hall has been working with textiles for many years, endlessly testing under expert supervision in controlled laboratories. Our success is measured by the efficiency of the operation in *your* plant. The benefits of our 85 years of experience are yours for the asking. For any textile problem, call for one of Stein Hall's trained salesmen.

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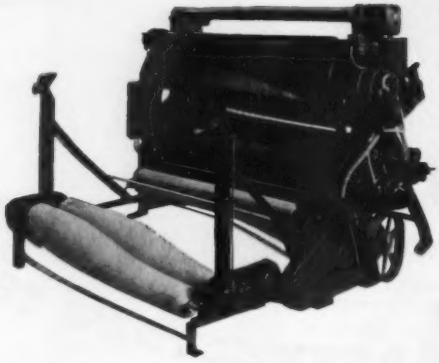
Textile Laboratories in Providence, New York, and Charlotte. Branch offices in 16 cities in the U. S. and Canada.

180 MILLION YARDS

of Rayon Fabrics

SHEARED ON ONE HERMAS A. V. SHEAR . . .



In an important fine goods mill a Hermas A V Shear has been in continuous three-shift operation for eight years. This is equivalent to twenty-four years of one-shift operation.

The average weekly production of this mill is 450,000 yards, making a total of 180 million yards in eight years of fifty weeks each.

Here's economy of labor on a grand scale.

What is more, during all those eight years of three-shift operation the shear had not been stopped *once* for the replacement of any major part. That's trouble-free operation!

Why not have this shear to conserve labor and assure production schedules in your mill also?

HERMAS MACHINE CO.

America's Only Exclusive Specialists in Clothroom Operation

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Ross Whitehead & Co., Ltd., Toronto and Montreal, Canada

Unisel, Ltd., Manchester, England

*(Correspondence in foreign languages invited)

agement Association, 330 West 42nd St., New York 18; paper, 62 pages, $1.25.

Personnel problems facing management during the present mobilization period are analyzed in this booklet by business, union, and government spokesmen. The papers were presented at the recent personnel conference of the AMA in New York. The themes are general, with unfortunately no specific textile applications that might be put into effect, say, tomorrow.

WAGE POLICY AND PROBLEMS IN A PREPAREDNESS ECONOMY, Personnel Series No. 136, papers compiled by American Management Association, 330 West 42nd St., New York 18; paper, 35 pages, $1.25.

This pamphlet discusses the impact of mobilization program upon wages and salaries and upon various aspects of collective bargaining. No strictly textile subjects are touched upon, but the material should be of reference value to those textile men in the wage-policy field.

Proper Lubrication

(*Continued from* page 155)

over, while it is a simple matter to eliminate this hazard, a difficulty frequently encountered is that lubrication is too often the job given to the least skilled worker in the mill. This worker is often transient and less responsible than he should be. For example, electric motors may require different greases from those in other antifriction bearings in the mill, yet the worker may find it easier to use the grease which he has in the grease gun rather than change it or go get another gun.

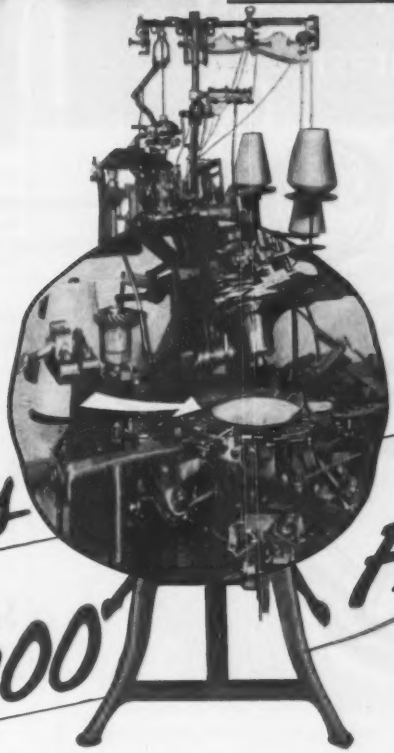
In the matter of which grease to use, lubrication engineers point out that the motor manufacturer generally has a list of approved greases.

COURSE OF ACTION. Once the proper grease lubricant has been determined, the next step is to set up a regular lubrication-maintenance program. Old lubricant should be flushed from the bearings and new greases added at definite intervals.

In modern motors, the bearing housings are generally equipped with pressure-relief systems so that adding the new grease at the top forces the old out through the drain plug. This step is usually done while the motor is in operation so as to avoid getting too much grease in the housing. Housings without the pressure-relief system may have to be dismantled and washed out with solvent, given an oil bath, then re-assembled and greased.

A lubrication cycle should be set up for every type of installation. This

BANNER ANKLET MACHINE ELIMINATES TRANSFERS



Savings Pay for HDR-300 FAST!

Get rid of hand transfers . . . get set for savings — savings which will pay off the initial investment in this Banner anklet machine fast.* The circle marks the point where transfers are made — automatically!

And besides eliminating the procurement, training and supervision of hand transfer operators — *all* your present hand transfer problems are ended. The Banner Dial-Rib Knitting machine is the *automatic* answer to these problems.

The "hands-off policy" represented by this new Banner "All-In-One" machine means that you can produce a quality true-rib top anklet in one, complete, non-stop operation. But even more than that, you'll be doing away with the rejects which always accompany hand operations. Your percentage of seconds will be greatly reduced – your volume and quality improved.

A Hemphill Sales Engineer is ready to supply you with specific performance information and exact savings data for the HDR-300, as applied to your own mill organization. Phone or write the Hemphill Company or any of its sales offices today for the full profit story on the Banner Dial-Rib machine.

★ ★ ★

BANNER HDR-300 "ALL-IN-ONE" MACHINE

Initial Production 3-inch Diameter, 48 or 54 Gauge With 5-Color Horizontal Stripes. (Smaller and larger diameters to follow.) See it and other Banner machines at the Knitting Arts Exhibition in Atlantic City, Booths 172-176, 205-209.

*Depends on individual mill practice, number of shifts, etc., but the savings are positive and quickly pay for the Banner Dial-Rib machine.

HEMPHILL BANNER MACHINES — Shaping Hosiery's Fashions All Over The World

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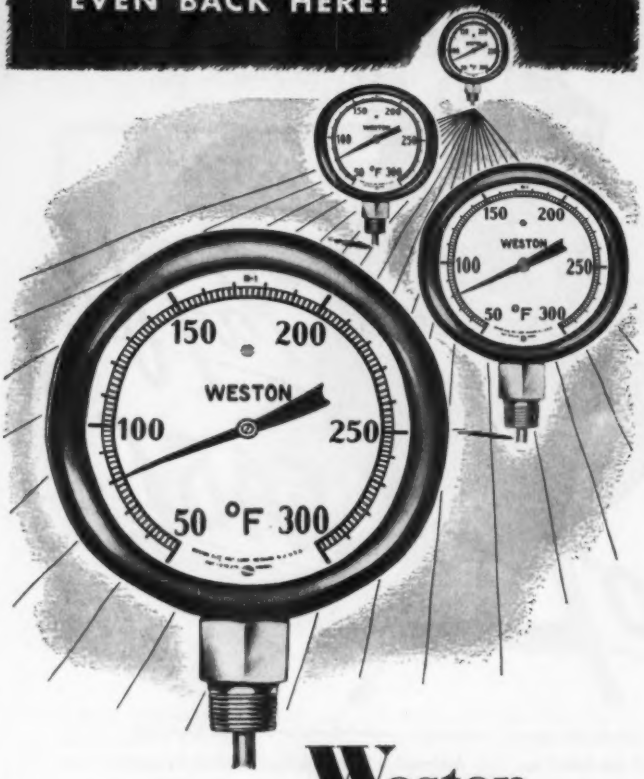


Weston
All-Metal thermometers

Seconds count when things go wrong . . . wherever temperatures are critical. And not even a split-second is lost in reading temperatures accurately, when the thermometers are WESTON. Their large, boldly marked faces are readable, even from a distance. And the rugged, all-metal construction of WESTON bi-metal thermometers assures dependable, trouble-free operation. Available in types, sizes and stem lengths for most industrial applications. Write for bulletin T-13. Weston Electrical Instrument Corporation, 637 Frelinghuysen Avenue, Newark 5, New Jersey . . . manufacturers of Weston and Tagliabue Instruments.

WESTON *Instruments*

***STORAGE** of greases and oils should be properly maintained like this. Lids are tightly fitted, drip cans are under spouts, greases are labeled plainly, and barrels are kept separate to facilitate cleaning and handling.*

cycle will, of course, vary with the performance required of the motor. For example, motors operating 24 hr. a day, seven days a week, naturally require more frequent attention than those with a lighter schedule. Here again, lubrication engineers advise getting in touch with either the motor or grease manufacturer. From a description of the type of motor and its function, they can give recommendations based on long experience.

Selecting a Mill Site

(Continued from page 139)

2. Water supply and waste-disposal conditions.
3. Availability of electric power, gas, purchased water, city sewers, etc.
4. Cost of site demolitions, or other preparation.

With a known plant area, and an estimate of the mill requirements in water, energy, etc., these factors may be evaluated on an annual cost basis; and the site selected by the results.

Land acquisitions well in excess of present needs often turn out to be excellent investments. The concept of need for spaciousness in all site features is inherently sound, as the growth history of many newly established industries has demonstrated.

Foundation conditions and flood hazards may be approached from the negative viewpoint. Construction costs can be inordinately high if the mill is located on bad foundations, and the cost of flood damage, or of providing against it, can well offset any apparent advantage in other features that a given site might have.

The selector today can obtain a wealth of factual location data from a number of agencies: State development boards, railway and utility industrial departments, and the bureaus of the Federal Government are no-

For more information, write direct or use Reader Service post card.

MARCH • 1951

CARD CLOTHING NEWS and views

WRITTEN MONTHLY BY E. A. SNAPE, JR., PRESIDENT, Benjamin Booth Company PHILA., PA.

Let

STRIP-O-MATIC*

Solve Your Carding Problems!

PROOF . . .

That

STRIP-O-MATIC* **Is A Real Problem-Solver:**

Proof lies in the ever-increasing use and repeat orders for this unique card clothing. Over 200 users plus repeat orders to date!

The story of STRIP-O-MATIC is as simple as that: its revolutionary design enables you to solve your carding problems!

STRIP-O-MATIC cards better, at lower cost to you, and in addition has so many PLUS features that users follow their first order with "repeats".

Today, with our Country in a State of Emergency, it is doubly important that you secure the very best production possible at the lowest cost. At no time could STRIP-O-MATIC be needed more than at the present, and we are indeed happy to be able to supply you with the amount you need.

We have curtailed our export business, thereby conserving our allotment of wire, foundation and leather to assure you of an available supply of the best card clothing possible. We owe this to you, just as you owe to your customers the best product you can produce; and which you *will* produce insofar as STRIP-O-MATIC can help you.

So—come to us with your carding problems and let us show you how ably STRIP-O-MATIC will solve them.

Sincerely,

E. A. Snape Jr.

President,

Benjamin Booth Company

Allegheny Ave. & Janney St.
Philadelphia, Pa.

With labor costs as they are, the fast, *mechanized* TENNANT System can save you more *today* than ever—besides eliminating scrubbing. Here are 5 reasons why TENNANT "dry cleaned" floors are cleaner . . . brighter . . . safer—yet *cost you less:*

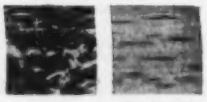
1 **Requires less manhours** for floor maintenance because floors can be cleaned *faster* . . . stay clean longer. Unlike rough, dirt-catching scrubbed floors, Tennant-cleaned floors are smooth, hard, dirt-resistant . . . clean up like magic! Saves time and expense.

2 **Makes floors easy to clean.** Fast, low-cost "dry cleaning" with a Tennant Machine keeps floors bright, durable. Only daily care is dry mop sweeping.

3 **Cuts accident costs.** Helps keep floors DRY and safe. Aids morale.

4 **Makes floors last longer** by protecting against dampness, decay and wear.

5 **Helps prevent losses** of yarn and cloth from splinter-snags and dirt.



HERE'S WHAT HAPPENS when you stop scrubbing your floors and switch to economical Tennant "dry cleaning."

Microphoto at left shows typical surface of a scrubbed floor. Note how water has broken down top wood structure and caused rough, jagged, dirt-catching splinters. This makes floor hard to clean, and it breaks down rapidly under heavy traffic.

In contrast, microphoto of a Tennant "dry cleaned" floor (right) shows how the bright, smooth, protectively sealed floor resists dirt and wear . . . and is easily cleaned with minimum manpower.

Write Today! Learn how mechanized "dry cleaning" can save you money. Ask for new bulletin "HOW TO GET BETTER RESULTS IN TEXTILE FLOOR MAINTENANCE."

G. H. TENNANT CO.
2586 North Second Street
Minneapolis 11, Minnesota

The way to finer floors
TENNANT
Floor Maintenance System

OFFICES IN PRINCIPAL CITIES

table. His task, of course, is to select relevant data and to interpret them in terms of the natural bias of the agencies. They are well aware of the importance of preserving confidences entrusted to them and, taken together, they represent an indispensable source for basic information.

The success of the selection depends heavily on the quality of the selector's judgment and on his ability to foresee accurately the developments in the future that will affect the industry.

Flameproofing Nylon

(*Continued from page 130*)

room temperature but at higher temperatures it may be stable for only a few minutes.

Application

The resin solution is applied to the fabric in a padder at room temperature. (Higher temperatures may be used for heavier pick up.) After padding, the fabric is air-dried at 240 to 260° F. and then cured for 5 to 30 min. at 280° F. Short curing times give equivalent resistance but poorer wash fastness.

Following curing, the fabric is scoured, well below the boil, in a slightly alkaline solution to remove excess acid. Rinsing, extraction, and drying complete the procedure.

An interesting sidelight on the flameproofing treatment is that it can be easily combined with a waterproofing treatment. Several fabrics were impregnated with a solution containing equal parts of "Zelan" AP paste and the thiourea-formaldehyde resin. The finished fabrics were satisfactorily waterproofed as well as flameproofed.

Operation Recorders

(*Continued from page 136*)

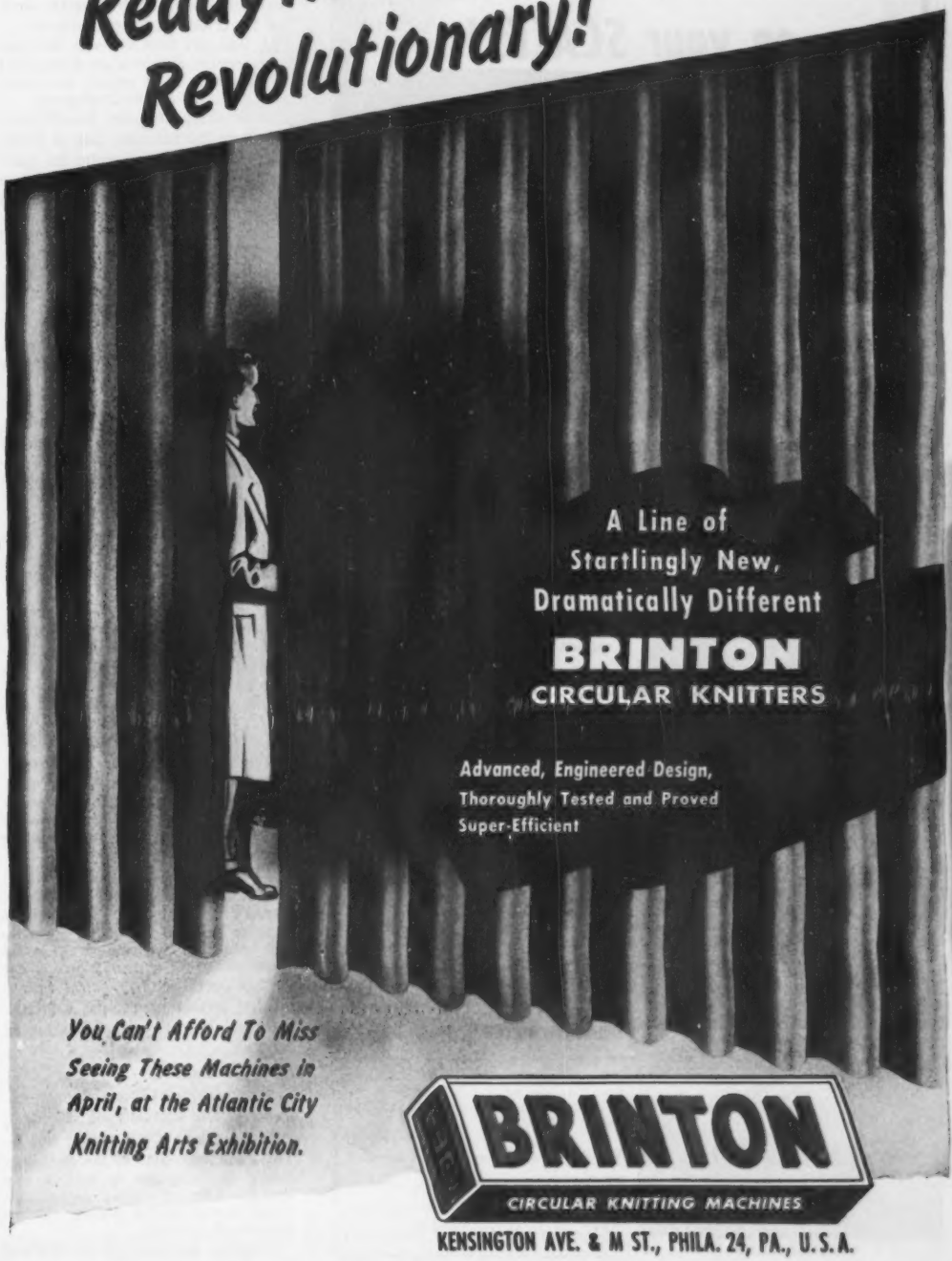
The other machines mentioned differ in some ways from the two I have described, but the main principles are the same.

How the Centralogram is Handled

The Centralogram for the previous day is cut off each morning. If we have several shifts, it is more convenient to divide the Centralogram so that operations for each shift are recorded on a separate length of chart.

The number of the Centralograph, the shift, week number, year, and date are written on the top of the Centralogram. The starting and finishing times of work, as well as rest and meal in-

Ready...and Revolutionary!



A Line of
Startlingly New,
Dramatically Different

BRINTON
CIRCULAR KNITTERS

Advanced, Engineered Design,
Thoroughly Tested and Proved
Super-Efficient

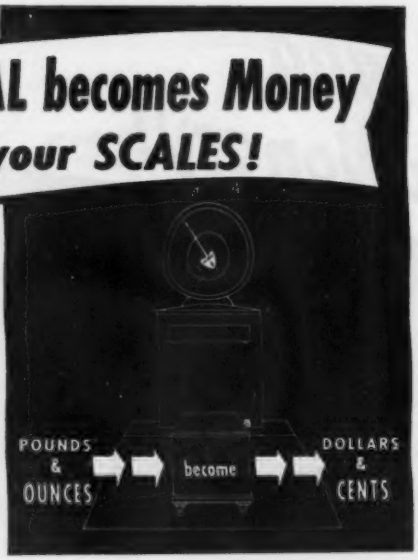
You Can't Afford To Miss Seeing These Machines in April, at the Atlantic City Knitting Arts Exhibition.

BRINTON
CIRCULAR KNITTING MACHINES

KENSINGTON AVE. & M ST., PHILA. 24, PA., U.S.A.

MATERIAL becomes Money
on your SCALES!

Errors made at the scale stay wrong forever. There is no chance to recheck; either the material has been shipped or, if incoming, has lost its identity in the general stock. You've got to be *right*—weigh it right—Toledo Printweigh means *accurate* weights *accurately* recorded!



STOP HUMAN ERRORS with PRINTWEIGH

PRINTWEIGH SCALES give you *accurate printed records* of each weighing operation in textile plants . . . positive assurance that your weight facts are right every time! Prints big, clear figures on tickets or strips. Saves time, stops losses for receiving, production, shipping, stock rooms, and many other textile weighing operations. Send for bulletin 2021 on modern weight control.

PRINTED WEIGHTS

YARDAGE SCALES

50th ANNIVERSARY 1901-1951

TOLEDO
HEADQUARTERS FOR SCALES

TOLEDO SCALE COMPANY
1201 Telegraph Rd., Toledo 1, Ohio
Please send me bulletin 2021 describing Toledo weight control.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ STATE_____

tervals, are indicated with red lines across the Centralogram.

The Centralogram is also supplemented with notes about certain stoppages not reported by code. The dial registration may be deliberately omitted for certain stoppages, such as:

1. Rest and meal intervals, the time and duration of which are determined in advance. They require no particular notes on the Centralogram.
2. Machine stoppages due to major repairs of the machine, lack of orders on the machine, or because the operator is absent from work. A note should be made on the Centralogram in these cases.
3. Certain short, recurrent stoppages can be specified in advance not to be dialed. We don't need to note them, as they are recognizable from the appearance of the diagram.

When the operator neglects to dial some stoppages, you have to complete the Centralogram with the appropriate figure.

How the Information Is Used

The recorded information can be used for many purposes.

1. Data and statistics for timestudies
2. Data for wage incentives
3. Quality control
4. Increasing and supervising efficiency
5. Data for planning and costing

Use in Timestudies

Timestudies are a very important tool for systematical analysis and reduction of delay time and other production-curbing factors.

The Centralograph makes it possible to obtain comprehensive data and statistics over a long period of time—data that will give a representative an accurate picture of the work pattern. The analysis will show where improvements in the organization of the work and in working methods can be made.

The statistics can also show where further investigations will be necessary. When stop-watch or methods analyses have been made of the manual operations, we can check to see if the values are representative for the average conditions.

After improvements, the Centralogram will show the size of the achieved results.

Stoppage Statistics

The "stoppage statistics" are a continuous clear summary of stoppages, arranged weekly by stoppage reason. The numerical value of the stoppages should be expressed in such a way that the different reasons can be compared as well as the pattern changes from week to week.

Stoppage statistics can be obtained

Where quality

is the

first consideration

in a fabric

there is

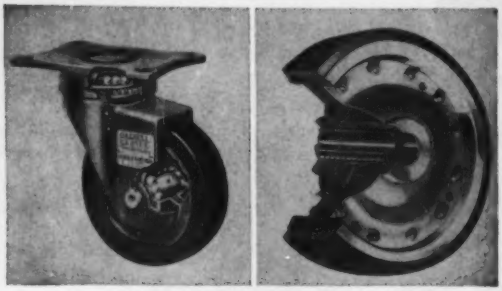
no substitute for

Celanese®

Acetate Rayon Yarn

*Reg. U. S. Pat. Off.

CELANESE CORPORATION OF AMERICA, 180 MADISON AVENUE, NEW YORK 16, N. Y.



A SAVING AT EVERY TURN

Choose just the right caster or wheel for your needs from the Darnell line of nearly 4000 types. These precision made casters and wheels will help you speed up production . . . will pay for themselves many times over.

SAVE EQUIPMENT
SAVE FLOORS
SAVE MONEY
and TIME

•

DARNELL

Casters & Wheels

DARNELL CORP. LTD 60 WALKER ST. NEW YORK 13, N.Y.
LONG BEACH 4, CALIFORNIA 36 N. CLINTON CHICAGO 6, ILL.

for groups of machines or individual machines.

Product Statistics

Certain time elements vary for different products. We can obtain useful information by arranging the time elements statistically by product. These product statistics may refer to production time per unit produced, frequency and duration of certain stoppages typical for the product, etc. The production time depends on the speed of the machine and on the frequency and duration of stoppages. The frequency of such stoppages may be influenced by the quality of the raw material or the speed and setting of the machine, whereas the duration of the stoppages may be affected by the method of production.

Product statistics make it possible to compare values obtained for different runs of the same item.

Product statistics may be justified only when the same or similar products are subject to repeated production. There must, furthermore, exist adequate need for the data obtained, such as possibilities of reducing the production time. We may obtain such reduction by altering the method of production, changing the speed of settings of the machine, selecting different raw materials, or making minor changes in the preceding processes.

The statistical values should be worked out for each machine. The period covered should be the batch-time for production in relatively small lots or a week for continuous production of the same articles.

Standard values can be worked out for products subjected to the statistics; values that are considered representative for a certain period. Abnormal deviations become apparent immediately when these standard values are entered on the specification sheet and the graph sheet. No reference need to be made to earlier statistics.

Use in Quality Control

In most textile operations, production depends on variations in quality. An example is the varying frequency of ends down.

For certain machines, such as looms, it is now possible to obtain an automatic recording of broken ends on the Centralogram. This recording is done by the use of a special device that is fitted to the warp stop motion.

This device will enable management to obtain answers to questions like:

1. What are the figures for broken ends or ends down on different machines of the same type, spinning the same quality and count?
2. How many broken ends occur in

WILDMAN

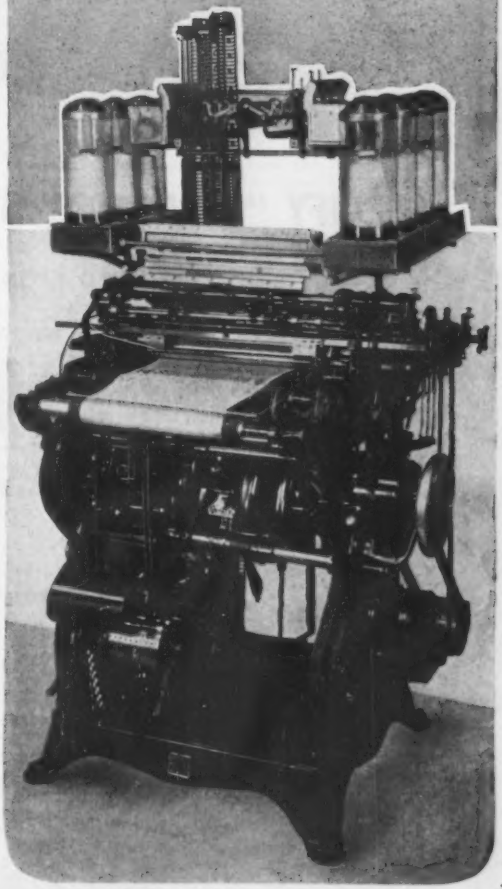
Single Head
Single Unit
Full Fashioned

Hosiery Machine

for knitting of

- **SYNTHETIC YARNS**
- **COTTON**
- **LISLE**
- **SILK YARNS**

When you're knitting hosiery of synthetic yarns, think of WILDMAN. Here is the machine that makes stockings of the finest gauges, regardless of season or weather . . . Knits entire stocking in one continuous operation from top to toe . . . Produces stockings a few hours after it reaches your floor.



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Why UNBRAKO

SPECIFY "STANDARD" SIZES

FOR FASTER, UNINTERRUPTED PRODUCTION

If you can use standard sizes of UNBRAKO Socket Screw Products, we can assure you of all you want, when you want them!

Your local UNBRAKO Distributor has full stocks of standard UNBRAKO catalog items on his shelves—ready for immediate delivery.

But "specials" are another story. Due to shortages and increased demand, deliveries are uncertain, costs prohibitive. And in many cases we find that "specials" are so close to the borderline that standards could easily be adopted.

So why not have your requirements re-checked? There may be many places where UNBRAKO standards could be used to advantage. If you wish, our "fastener engineers" will be glad to make recommendations. No obligation, of course.

And if you don't have our latest catalog
—write for Bulletin 643-R

KNURLING OF SOCKET SCREWS ORIGINATED WITH "UNBRAKO" IN 1934

Knurled Socket Head Cap Screw
Flat Head Socket Cap Screw
Knurled Point Socket Set Screw
Knurled Socket Head Shoulder Screw
Fully-Formed Pressure Plug
Precision-Ground Dowel Pin

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 35, PENNSYLVANIA

a machine just after a change of material or count?

3. What effect does a change in humidity have on the number of broken ends?

4. What effect does a change of speed have on the number of broken ends?

The answers will make it possible to get optimum production, and the quality of the products will be improved through the decreased number of broken ends.

Increasing and Supervising Efficiency

The production is sometimes of such a character that immediate corrective action from management very seldom will be necessary. In this case we don't need to have somebody continually watching and controlling the Centralograph.

But, in most cases, we prefer to have a manned Centralograph station. Such supervision will enable us to discover almost instantly if something goes wrong, and quick action can be taken.

The person who is doing the statistical analysis of the Centralogram, can just as well be placed in the Centralograph control room as anywhere else. Thus we have the advantages of a manned station.

The next possible development would be to give the Centralograph controlman the authority to initiate corrective action to remedy certain problems created in the mill. Managers and supervisors have been opposed to this idea, because they felt it would destroy the normal report and order channels. In this way they would lose contact with and the control over the operations. Experience has shown that this is not true.

We can consider a plant with diversified manufacture and where the processes are quite automatic. Here the Centralograph station is a point from where quick information can be sent to the department manager, the production-control engineers, the plant engineer, and others concerned. The foreman for the shop can also receive accurate and immediate notice if anything happens.

We can also free the supervisors from many of the smaller and more routine details that create delays.

Samples of causes of this character are:

1. Lack of material at a work station
2. Delayed material delivery
3. Small repair jobs on machines

The Centralograph station can notify the storeroom if materials are needed. If the plant has a special interval transport section, it can be ordered to the critical points with

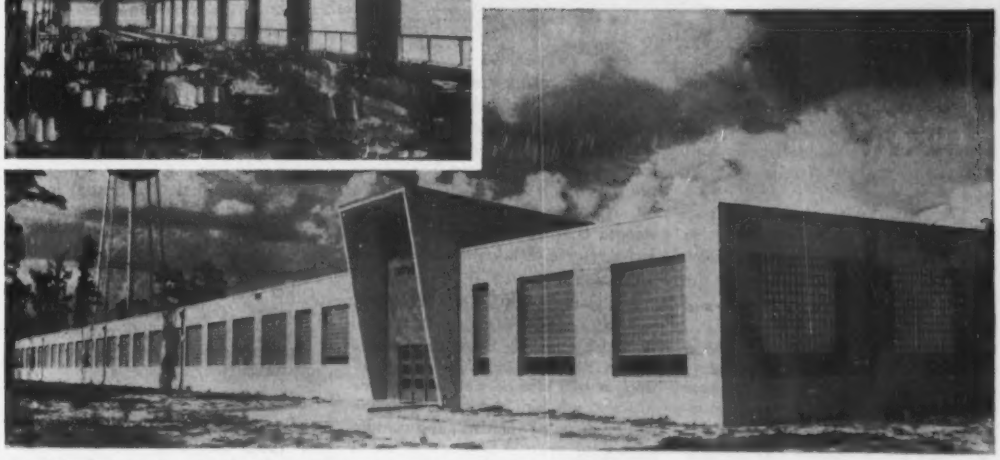
For more information, write direct or use Reader Service post card.

"Why do I need PC Glass Blocks in my mill?"

There's a ready answer to this question. For, wherever PC Glass Blocks have been installed—either in original construction or in extensive sash replacement programs—they have helped to control temperature and humidity; they've increased production, improved product quality, cut maintenance costs, kept employees better satisfied.

PC Glass Blocks seldom require repairs or replacements. There's no wood or metal sash to rot, decay, rust or corrode; no need for periodic painting and puttying. Cleaning costs are substantially reduced, since there are no small, individual panes to wash. In fact, normal rainfall and routine maintenance preserve their high light reflectance. What's more, PC Glass Blocks reduce heating and air-conditioning costs. That's because they have more than twice the insulating value of ordinary single glazing. And they guard against the infiltration of dust and dirt, admit an abundance of diffused natural daylight over wide working areas.

Why not investigate what PC Glass Blocks can do in your mill? Our specialists will be glad to help you with your new building or sash modernization programs. Meanwhile, fill in and return the coupon for our free literature on the use of PC Glass Blocks in industrial and commercial buildings.



THESE INTERIOR and exterior views of the new building of Pinecrest Cotton Mills, Inc., Pine Bluff, Arkansas, show the use of PC Functional Glass Blocks, adopted as an integral part of the mill's architecture. They provide abundant daylighting, softly diffused for employee eye comfort; their high insulating value contributes to efficient temperature and humidity control. Architects: Hardy & Shumacher, Kansas City, Mo.

PITTSBURGH PC CORNING

GLASS BLOCKS

The mark of a modern building

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Dept. W-31, 307 Fourth Avenue
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Without obligation on my part, please send me a rare copy of your booklet, "The mark of a modern building—PC Glass Blocks."

Name.....

Address.....

City.....State.....

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It's a combination, designed by Dixon engineers, to reduce oiling time and labor costs . . . to promote economical, continuous and dependable saddle operation in long draft spinning.

The Slixonice back saddle incorporates special, long-lasting, low-friction plastic bearings instead of cast iron. After a long period of use, only the plastic inserts need be replaced — not the entire saddle.

When used on either H & B, Whitin or Saco-Lowell long draft systems, back roll lubrication and the danger of oil-soaked yarn are completely eliminated. The streamlined design of the Slixonice saddle reduces lint accumulation and permits accurate control of roll speed and weighting.

Use of the Lubronze bearing in the Dixon front saddle reduces front roll lubrication to a minimum. The bronze insert is impregnated with graphite, oil and other materials to provide a smooth bearing surface, low friction and a reserve of lubrication for extra protection.

See your Dixon representative for full information on how old saddle types can profitably be replaced by the Dixon Slixonice-Lubronze combination. It will also be well worth your while to ask him about the complete Dixon line of saddles and saddle assemblies.

SOUTHERN SALES:
R. E. L. Holt, Jr. & Associates, Box 1474, Greensboro, N. C.
Covering the Carolinas and Virginia
J. W. Davis, Mfg'rs. Agent, Box 745, Columbus, Ga.
Covering Georgia, Alabama, Mississippi, Louisiana and Tennessee
NORTHERN SALES:
W. R. Potter, Sales Manager, Dixon Lubricating Saddle Co., Bristol, R. I.
Covering New England

FOR 75 YEARS 1876 DIXON SADDLES 1951 WHO COST SO LITTLE AND SAVED SO MUCH

DIXON

materials. The delivery time can also be checked by the Centralogram.

The instrument control man can call on a repair man if a breakdown occurs. If all repair men are occupied with service repair at the same time, the control man will have to call on the production-control chief, who can decide which repair jobs are the most urgent.

Such services can save a lot of the supervisors' valuable time.

To increase still more the effective working time of the machines, we can add a lamp-board and searcher-boards to our system.

The lamp-board contains lamps corresponding to the machines equipped with manual contacts. As soon as a contact or dial has transmitted the reason for the machine stop to the control instrument, the corresponding lamp is lighted on the board. This clearly shows that there is something wrong. The lamp-board can be placed near the Centralograph or in the office of the executive concerned. He, therefore, rapidly gets to know when any of the machines are stopped and can contribute to a quick removal of the causes.

Searcher boards contain lamps corresponding to the departments that are controlled by the Centralograph. They can be mounted at suitable places in the works premises.

The searcher-boards are used for searching of the overseer. When the worker adjusts his dial to a certain position, for instance 3, the corresponding department lamp is lighted up on all boards. It signals to the overseer that he is needed in the particular department.

The combination of central instrument, lamp-board, searcher-boards, and reporting dials has in practice proved to be very effective.

The system can be completed with either efficiency-recording clocks or counters. The time for the effective as well as for the ineffective working-time can directly be read off these instruments.

Other Applications

During the last years the application of these recording instruments has been largely expanded in fields, where the control has been found valuable.

They can be used to control the condition and maintenance of the machinery. This use can be a guide for the investment in new machines, so that renewal is done neither too early nor too late.

The Centralograph is a very reliable watchdog for various processes where the pressure and the temperature should be held within certain limits. Also, fire safety doors can be con-

DOUBLE DISC MODEL—one type for 10 to 140 grams; one for 100 to 300 grams

A Kidde Compensator

CAN SOLVE YOUR TENSION PROBLEMS

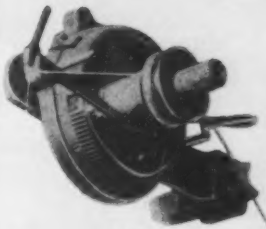
Kidde engineers, specialists in textile tensions, have designed three compensators to eliminate the variables in yarn tensioning.

The Double Disc Model maintains constant tension at high speeds hitherto thought impossible. It passes knots without yarn breakage and is excellent for tender, high twist yarns.

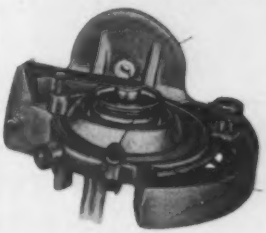
The Standard Model is for average speeds and tensions. It is useful in quilling as well as in twisting and doubling, particularly with cottons and rayons, warping of rubber yarns, winding of narrow fabric bobbins.

The Warp Model is inexpensive enough to control every end economically. It is small, easily installed and avoids uneven tensions at the warp beam which may result in excessive spoilage and, in extreme cases, beam buckling.

For information on any of these Kidde compensators, fill in and send the coupon below.



STANDARD MODEL—6 to 120 grams



WARP MODEL—up to 20 grams

Walter Kidde & Company, Inc.
391 Main Street, Belleville 9, N. J.

Kidde

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391 Main Street, Belleville 9, N. J.

Gentlemen:

Please send me additional information on the Kidde Compensators.

Name_____

Company_____

Address_____

City_____ State_____

You CAN improve on a 95!

In skeet shooting, it takes an expert to break 95 out of 100 "clay pigeons"... but *champions* do better than *that*. They score 96, 97, 98, sometimes all 100, because they've given special, determined attention to the fine points of the sport.

In textile production, too, even *good* efficiency can be improved. For instance, it's entirely possible that a certain starch . . . perhaps even tailor-made to your own specifications... could contribute to an efficiency gain.

Why not call your Anheuser-Busch representative? He'll be glad to come and talk it over.

CORN STARCHES
DEXTRINES
GUMS
CORN SYRUPS

Phone or write

ANHEUSER-BUSCH, INC.

CORN PRODUCTS DEPARTMENT
ST. LOUIS

ST. LOUIS, MO.	CHARLOTTE, N. C.	NEW YORK, N. Y.
721 PESTALOZZI	607 JOHNSTON BLDG.	33rd & 12th AVE.

trolled by contacts mounted on the doors.

Attitude of Labor

Labor has very often shown caution and opposition when the installation of an automatic registering system has been discussed. This opposition is rooted in a general suspicion of management controls. The word "control" doesn't sound good when it can be associated with any form of "man-control."

The workers feel that the supervision already is sufficiently close. They claim that the employers should have more confidence in the employees and show it in practice.

This opposition is simply based on a misunderstanding of the whole purpose of the automatic registering instrument. To change this attitude, we have to give a very thorough and careful explanation of the true objectives and show how everybody can benefit from the installation—management as well as workers and consumers.

The worker who knows that difficult obstacles sometimes hamper his performance can substantiate it with the aid of the Centralogram. He no longer needs to argue with the timestudy man because certain factors didn't show up in the timestudy, when everything ran smoothly. It will also help him to perform his operation without annoying delays.

Knit-Fabric Shrinkage

(*Continued from page* 153)

tion with drying apparently serves to maintain a major portion of the strains produced during knitting rather than to superimpose additional strains. It is recognized that if wet finishing and drying could be accomplished without tension, the relaxed fabric would exhibit a minimum of laundering shrinkage.

Gray fabric was found to contract approximately 25% in width during bleaching. There was a simultaneous temporary increase in the wet length of the fabric ranging from 2 to 6% as a result of the continuous tensions to which the fabric was subjected in scouring and bleaching. After drying in a loop dryer, the tubing contracted slightly further in width.

These dimensional changes help to explain the fact that wet-finished and dried fabric is subject to appreciably less shrinkage than gray fabric. Width shrinkage brought about by wet finishing had increased the tightness of the fabric, thus effectively increasing the wales (corresponding to needles) per inch. Laundering of the wet-finished fabric thus produced an actual elon-

Tape's a winner on the last lap

Now it's *easy* to prevent rolls and bolts of cloth from unwinding! Last lap of fabric is quickly tabbed in place for safe handling with short strips of "SCOTCH" Textile Tape No. 916. Pin holes in fabric are eliminated. Stretchy tape won't loosen when cloth contracts on roll.

And *other* "SCOTCH" Textile Tapes are saving time, too—in splicing, flagging defects and identifying cloth. They stick at a touch—require no application equipment, leave fabric free of adhesive residue.

A new 26 page booklet shows case histories of these tapes in action. Send the coupon below for your copy.

WARP THREADS SECURED for immediate full speed operation with easy-to-handle "SCOTCH" Brand Textile Tape No. 200.

AFTER SLASHING, warp ends are held with the new, tough "SCOTCH" Brand Textile Tape No. 254 for easy beam transfer.

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Please send free copy of booklet "'SCOTCH' Textile Tapes in Action".

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SEMI AUTOMATICS ARE PRODUCING ARGYLES EFFICIENTLY IN MILLS THROUGHOUT THE WORLD

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4" DIAMETER — **80-112 NEEDLES**

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ESTABLISHED 1906

CANADA

gation in width rather than a shrinkage. In addition, the consolidation or tightening of the fabric in width allowed for less length shrinkage.

Since the potential width shrinkage introduced in knitting is eliminated in wet finishing, it should be practical to reduce length shrinkage by increasing the yarn size and number of courses per inch, despite the concomitantly greater potential width shrinkage. The subsequent calendering operation could then be used to secure optimum width shrinkage while still maintaining improved length stability.

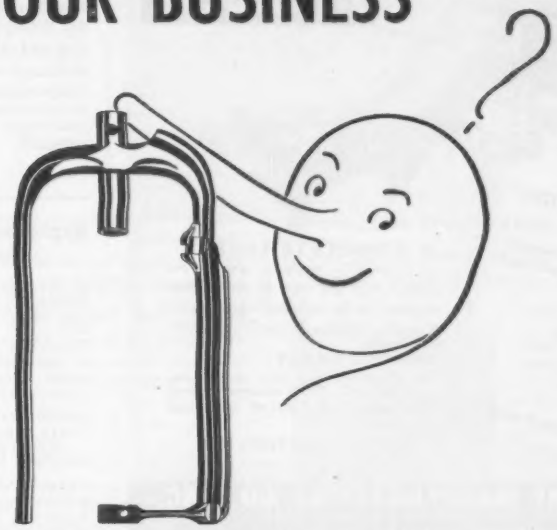
CALENDERING. Rib fabrics are very frequently calendered so that they finish 3 in. narrower than the diameter of the cylinder on which they are knit. For example, a fabric made on a 17-in. diameter cylinder will be calendered to finish 14 in. doubled width. The actual reduction in the circumference of the tubing is from approximately 53 to 28 in. To implement this practice for a given fabric, adjustments are made in frame or spreader widths, depending on the yarn size and knitting stiffness.

To test the effect of calendering on laundering shrinkage, two series of fabrics were knit on a Wildman machine, one from 20s yarn and the other from 30s; both fabrics had a knitting stiffness of 33 courses per inch. For the given yarn sizes, these fabrics exhibited the best stability to length shrinkage obtainable on the particular machine. The fabrics were then bleached and dried in a conventional fashion. The fabrics calendered with greater stretch shrank more in width when laundered and less in length. In addition, for a given amount of stretch in calender width, the fabric made from 20s yarn shrank less in length but more in width than the fabric made from 30s yarn.

In Fig. 3, the length and width shrinkages of fabrics made from 20s and 30s yarns have been plotted against the calendered width of the tubing. It is apparently possible to obtain, by proper choice of frames, complete shrinkage control in length or width, but of course not in both directions simultaneously. For most purposes, values lying near the point of intersection of the length and width curves are of most practical significance. If the tubing is calendered to the width corresponding to the intersection of the curves, then a balanced shrinkage of approximately 11% is obtained in the case of the fabric made from the 20s yarn, and a slightly higher shrinkage is obtained for the fabric made from 30s yarn.

In the case of rib-knit fabrics such as these, it is possible further to im-

ARE WE GETTING OUR NOSE IN YOUR BUSINESS



. . . IF WE ARE, YOU'RE GETTING SMOOTHER, STEADIER SPINDLE OPERATION WITH RCK FLYER PERFECTION

If it's spinning efficiency you want, the condition of your flyer noses can make a powerful dollars-and-cents difference. That's why Ideal Machine Shops includes "nose conditioning" in its complete flyer rebuilding service.

Straightening noses is, to be sure, a minor part of the super-service which Ideal gives to flyers. There's precision swaging and taper reaming for perfect flyer-spindle fit . . . SELECTO SPEED balancing, to give each flyer perfect balance at individual mill speeds . . . your choice of the famous RCK rust-resistant finishes. Even with all these, a crooked, damaged flyer nose *could* jerk and ruin your roving—but Ideal fixes noses good as new.

Ideal's expert, conscientious attention to *every detail* of *every job* is saving money and improving quality for mill men throughout America. Let us do the same for you.

EVEN THE NOSE ON AN IDEAL RECONDITIONED FLYER GETS SPECIAL TREATMENT

For best results . . . We recommend that you have flyers and spindles rebuilt at the same time, to assure perfect fit and eliminate vibration. Ask about our spindle repair service.

IDEAL MACHINE SHOPS, INC.

Phones 4161 and 4391

BESSEMER CITY, NORTH CAROLINA

27TH YEAR OF CONTINUOUS SERVICE TO TEXTILE MILLS

More than 500 MILLION pounds of yarn conditioned annually-with HYGROLIT

BETTER PRODUCTION
Less Cost

Guaranteed by a Complete Line of HYGROLIT Conditioning Liquids

1—perfect twist setting
2—adequate moisture regain
3—proper yarn lubrication
4—mildew prevention
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6—neither oxydation nor staining

A COMPLETE LINE

of HYGROLIT machines assures the correct type and size of conditioning machine for the individual requirements of a mill. (Bobbins, Tubes, Cones, Skeins and Fabrics.)

WITHOUT COST

We will study your own conditioning problems and submit recommendations based upon many years of specialized experience.

Write for illustrated bulletin 901-B.

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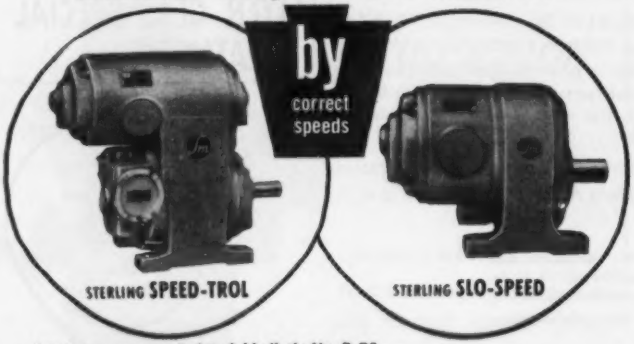
Authorized agents all over the world

power modernization
conserves manpower and materials

by correct speeds



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Ask for your copy of pictorial bulletin No. D-73 . . . showing how and where Sterling Electric Power Drives increase productivity of men and machines — control quality — eliminate waste — save space — provide versatile mounting — cost less to install and to use.

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prove length shrinkage by calendering wider, since shrinkage in width up to 15% will be more than offset by the ease of stretching (dimensional restorability) of the one-by-one rib.

Thus it may be seen that it is possible to manufacture rib fabrics having less than 10% potential length shrinkage through the proper choice of knitting and calendering conditions. Such shrinkage would represent a marked improvement over conventionally manufactured rib tubing in which shrinkages as high as 20% are common.

Exploring the Community

(*Continued from page 177*)

lowships it maintains, also makes available two cooperative scholarships where the recipient alternately works in the mills for three months and attends college on three months leave of absence which preserves the students position with the company.

"And after all," I thought that afternoon as I left the little informal conference and walked down the administration building's halls lined with wonderful textile exhibits, all tokens of the skill and ability and workmanship of the half a million textile workers of America, "can anything help more to keep the morale of working parents at a high level than to know that educational aid may be had for their ambitious sons and daughters." Provision of such scholarship aid by mills is one of the truly fundamental efforts toward better understanding. It is being underwritten by textile mills not from a paternalistic standpoint but strictly as a matter of good business investment toward a greater industry and better community development and achievement.

Pointers for Supervisors

(*Continued from page 178*)

Can you think back and remember the first time you were made to feel really important? When I was a young man starting in business, my father was my employer and a very stern one. He was very definitely of the old school.

I remember vividly when my father turned to a friend of his who desired to visit another plant some distance away. I was surprised when my father said: "Let Clarence drive you there. He is a very good driver." This was the first time that I had ever heard my father say that I was really good

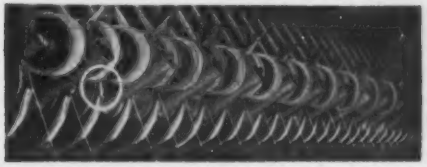
PNEUMAFIL®

and Mobilization

To the textile industry, mobilization means more yarn, more cloth, with fewer spindles than in 1940 . . . despite scarcities of raw materials . . . shortages of man power . . . and shortages of machinery. These fewer spindles are now able to produce more yarn because of mill modernization programs in which the Pneumafil System has played an important part. Today 6,000,000 Pneumafil equipped spindles are producing more yarn with less man power . . . with less materials.

Conserves Man Power

Spinners are operating 20% to 40% more sides, and with less work. Piecing up is so simplified that learners can be trained in one-third of the time. Good spinners can be made quickly and from less skilled labor. Because of fewer ends down (about 25%) and because of the elimination of spinning doublings, fewer man hours are required for the same production in spinning . . . and in warping, slashing, winding, and weaving as well. Less cleaning labor is required . . . fewer sweepers, frame cleaners, blow-off men . . . also "week end" cleaning is not required as often. Fewer waste machine tenders are needed because the superior quality of the white waste collected by the Pneumafil System requires no waste machine processing.



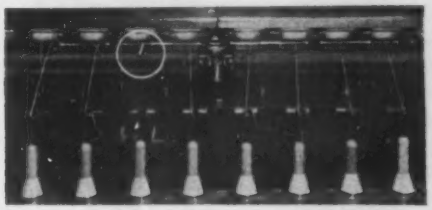
Conserves Raw Material

The Pneumafil System opens and collects waste without damaging the fibres. It eliminates the need for waste machine processing or down-grading. The possibility of top grade, scarce raw materials going out of the door as sweeps is eliminated . . . there is no spinner waste to drop on the floor. The collected waste may be reused by any mill whether spinning Egyptian or American cotton, wool, worsted, or synthetics.

Increases Production

Higher frame speeds of as much as 18% have been and are being obtained after the installation of Pneumafil equipment . . . and with no stoppages for balled up sides . . . also ends down reduced by as much as 25%. Work runs smoother and better. Fewer ends down mean better spinning production. Fewer slubs, gouts, and end piecings mean better winding, warping, slashing, and weaving production.

The heavier yarns and coarser goods required by the mobilization program mean spinning bottlenecks, which are alleviated with the Pneumafil System. Mills operating the 6,000,000 Pneumafil equipped spindles on cotton, wool, worsted, synthetics, jute, and asbestos are responsible for making the name "Pneumafil" synonymous with increased production per man hour with less labor and raw material . . . and with lower cost.



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CHARLOTTE, N. C.

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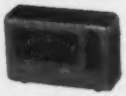
Bendix Friez MAKES the RIGHT INSTRUMENT at the RIGHT PRICE for EVERY JOB!



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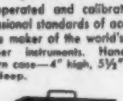
Precision Humidity and Temperature Indicator
Hair-operated and calibrated to professional standards of accuracy by the maker of the world's finest weather instruments. Handsome, modern case—4" high, 5½" wide, 1⅝" deep.

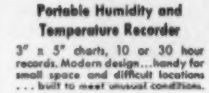
Model HA/2
Hand Aspirated Psychrometer
Accurate readings obtainable without special skill. Psychrometric readings can be taken at any point desired however inaccessible.

Model T60
Portable Humidity and Temperature Recorder
3" x 5" charts, 10 or 30 hour records. Modern design...handy for small space and difficult locations . . . built to meet unusual conditions.

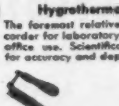


Model 594
Hygrothermograph
The foremost relative humidity recorder for laboratory, factory, and office use. Scientifically designed for accuracy and dependability.

Model 573
Motor Aspirated Psychrometer
Designed to determine wet and dry bulb temperature with laboratory accuracy—Motors supplied for use on 115 V., 50 cycles or 60 cycles.



Model S/1
Pocket Sling Psychrometer
A small, low cost instrument. Thermometers graduated in 1° increments from +35° F to +110° F. Furnished complete with case and psychometric slide rule.



Model 550
Sling Psychrometer
Manufactured to U. S. Weather bureau specifications. Thermometers graduated in 1° increments from −20° F to +120° F. or −35° C to +49° C.

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Small Sewing Units

(*Continued from page 147*)

sewing operations necessary to complete a garment are done by one group. Each group sews a particular type, size, and style of garment. Operators and machines in the groups vary from 7 to 28.

Assignments are made according to time-and-motion studies. Operations necessary for each garment are balanced within each group so that no bottlenecks or delays occur. Wherever possible, operators of about the same efficiency are placed in a group.

To maintain an even flow of material within the production unit, it has been found advantageous to add one-half operator to two different operations. For example, after all the machines in a group are set up, an extra flatlock machine on which two different sewing operations are performed may be added to the group. Another case is where one operator will alternately run both a buttonholer and a button sewer. This flexibility helps to eliminate possible bottlenecks and relieves tension within the group.

Employees within a production unit are encouraged to make suggestions to simplify operations, increase production, and improve working conditions.

Production demands are met by increasing the number of production units, either by organizing new units or shifting units from one style to another.

Vacancies in a production group are filled from a staff of extra operators or from the training group maintained at all times at the mill. The spare operators are generally well experienced in all phases of garment making. When they are not needed to fill a vacancy, they perform other duties in the mill.

Production units are set up on a base standard for piece-rate pay. Although there is an incentive plan and rivalry between groups, operators are

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so well trained that there is very little difference in the production of the different groups. The mill has found that where operators are relaxed and not under tension, maximum production is obtained at a fairly uniform rate.

TRAINING. E-Z Mills maintains a continuous training school, with an average class of about 30 employees. The course for each employee lasts from three to four months, depending on the type of machine. Employees are trained on only one kind of machine, but opportunity is given for training other types. Normally a new operator is set in her preference at the start of training, but she may shift to another type of machine if she desires.

Instructors are sympathetic and carefully explain every part of the sewing machine and the different kinds of work that can be performed on it. The instructors continue to be helpful after the course is completed and the operator is assigned to a production group. Supervision is continued over the new employee until confidence and experience are gained.

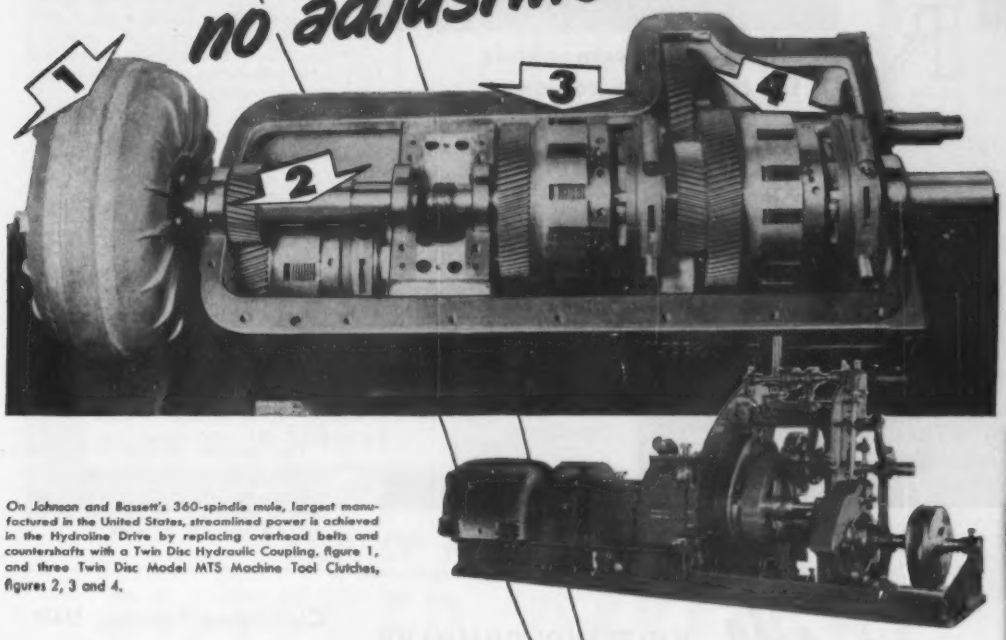
When a change from one style of garment to another is made, test runs are carried out to insure the most efficient procedure, with a minimum of materials handling, so that garments are put together in a natural pattern. Machines are arranged for a free and easy flow to completion within the group. Sometimes it is necessary to change the number of machines and operators in a group.

On a style change, the stock boy places garment bodies and fillings at convenient points in the group working area. The order card remains with the first piece of the garment, and each machine operator makes necessary changes as it is processed to completion. Most orders are in 40- to 50-doz. lots, but orders of any size lots can be produced by the group without loss of efficiency.

As an aid to better and more comfortable working conditions, the mill remodeled production floors and replaced the old-style roof supports with steel trusses. Fluorescent lighting and a ventilating system were installed. Loud speakers were strategically placed throughout the mill so that music can be broadcast from a central station in the office.

MAINTENANCE. Maintenance of the machines is carefully scheduled. Operators are not permitted to oil their machines. Thus work is done by mechanics who oil and check each machine daily. The number of times each day a machine is oiled depends on the make. For example, the Mer-

No belts to slip... no adjustments to make



On Johnson and Bassett's 360-spindle mule, largest manufactured in the United States, streamlined power is achieved in the Hydroline Drive by replacing overhead belts and countershafts with a Twin Disc Hydraulic Coupling, figure 1, and three Twin Disc Model MTS Machine Tool Clutches, figures 2, 3 and 4.

Overhead belts and countershafts, with their multiplicity of hazard, operating and maintenance problems, are replaced with a compact, streamlined transmission unit in the Johnson and Bassett HYDROLINE DRIVE Mule.

And one result has been a 10 to 20 per cent *increase in production.*

The transmission includes a Twin Disc Hydraulic Coupling and three Twin Disc Machine Tool Clutches. The fluid coupling assures smooth, shock-free starting, permits the motor to come up to working torque fast to maintain uniform spindle speeds.

With no belts to slip, no adjustments to make for extended periods, the whole operation is cleaner, safer. And smooth power assures higher quality yarns, from the coarsest to the finest.

Why not investigate Twin Disc Hydraulic Couplings with their *smooth* power-flow performance. Investigate, too, Twin Disc Machine Tool Clutches with instant release and high torque capacity in the most compact space. It will pay you to obtain complete information. Write today for engineering bulletins.

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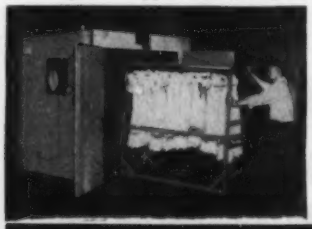

View of "H-W" Conditioner in Rosedale KNITTING COMPANY mill, Reading, Pa.

The Industrial Dryer Corporation
STAMFORD, CONN.

row machines are oiled four times daily. All machines are cleaned as needed, the Flintlocks being given a thorough cleaning twice a week.

Major overhaul is not on a time schedule. It has been found through experience that proper lubrication and cleaning will keep a machine operating over a long period without need of repairs. However, when there is a breakdown, the machine is removed to a central shop and repaired by machine specialists.

Mechanics are trained as specialists on a specific make and class of machine during the training course. Later, if they desire, they are trained on other types and makes. However, experience has been that efficiency is higher when mechanics specialize on one make of machine.

E-Z Mills employs a system of light signals [TW, June, '47, p. 145] to indicate to the repair and maintenance department the make and location of a machine requiring service. The maintenance department either repairs the machine or removes it and installs another machine in its place.

The damaged machine is returned to the shop for necessary repairs or adjustments. Then it is either put back in operation at the end of the shift or retained in stock.

Continuous Treating Unit

(*Continued from page 133*)

operate from three interlocked electrical circuits for reasons of safety.

The third unit is a 52-spindle drum-type winder, complete with ribbon breaker. It incorporates adjustments for variables, such as cord size and coefficient of friction. The winder produces random-wound cheeses that are 8 in. wide and up to 12 in. in diameter.

There are two main tension zones, one wet (between the impregnator and the oven) and one in the oven itself. In the drying zone, tension can be thrown to either the top or the bottom of the oven. Power is supplied by one 5-hp. motor. Change gears run in an oil bath, and chain drives assure positive differential speeds of the gripping rolls. Change sprockets are used to vary over-all speed ranges.

USE WITH SYNTHETICS. While the yarn-process machine was developed originally for the purpose of bonding cotton-yarn fibers, it has found even greater usefulness in the treatment of both other natural and man-made fibers and yarns, like rayon, nylon, and Fiber V. Promising results

These men can work in comfort, close to and facing the window, because Blue Ridge Frosted *Aklo* Glass filters the incoming daylight to reduce glare and heat. Springs Cotton Mills, Lancaster, S. C.

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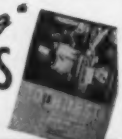

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have been achieved with the Vinyons, Orlon, and Fiberglas.

Rayon tire cord, treated with both single and double dip in accordance with several manufacturers' specifications, is currently being tested on the Kidde machine. In the hose-cord field, the machine is processing both high- and low-tenacity rayon cords. It has been found possible to take a low-tenacity rayon and reduce its elongation while increasing its grams-per-denier strength. Reduction of elongation can be set at any level down to the point where filament breakage occurs.

In processing rayon for use in V-belts, it is possible to reduce the elongation to between 1.5 and 2% at the 50-lb. level. As an example, an untreated conditioned cord, breaking at approximately 100 lb. and having an elongation of 3½% at the 50-lb. level, can be processed at the same level to 1.75% elongation, with a 2% moisture content. This change produces an increase in yards per pound, and in addition any degree of penetration of the adhesive chemical can be attained.

OTHER IMPROVEMENTS. Another problem now solved by the yarn-processing machine involved high-tenacity rayon tow. The difficulty in using this tow for a particular end-product was its tendency to shrink about 8% of total immersion. Reverse gearing of the machine was employed in processing, and the tow was allowed to shrink a controlled amount both in the bath and in the oven. By this method, shrinkage of the treated rayon, under total immersion, was reduced to less than 2%—a safe amount.

Properties of nylon to be used in rubber goods have been improved by the machine. One treatment consists of extending the yardage per pound as much as possible—heat setting and impregnating it simultaneously. It has been found that nylon in a thrown state can be drawn down to the elongation of the basic filament—approximately 15 to 17%.

Another phase of nylon treatment is processing at high temperatures without removing elongation. Controls built into the Kidde machine allow the nylon to be run through without change in elongation, while giving it a definite heat set. Tests of the processed nylon show that it shrank approximately 3%, as against 5 to 8% for untreated, when both yarns were subsequently re-heated to 300° F. in relaxed state for 20 min.

Much the same results have been achieved with Fiber V for use as the strength member in V-belts.

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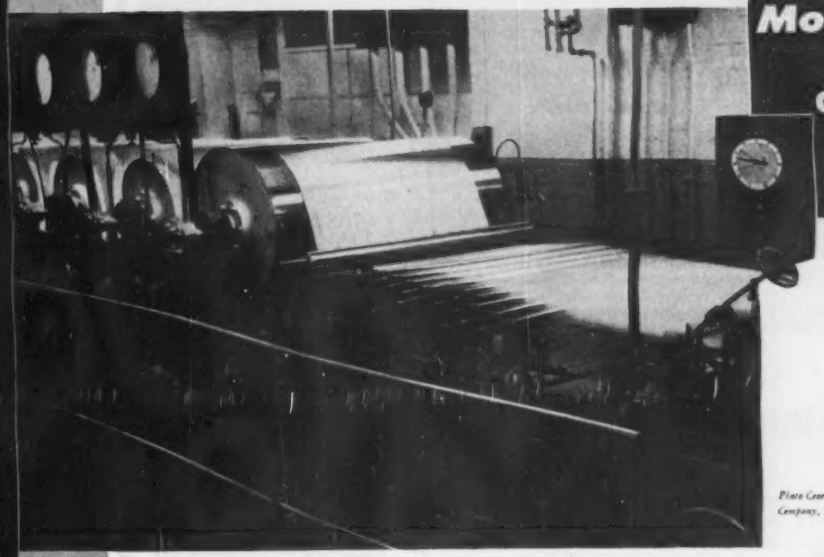

Photo Courtesy of Stehli & Company, Inc., Lancaster, Pa.

THE Brown electronic *Moist-O-Graph* controller brings a new simplicity to the precise control of regain. It employs fewer moving parts, minimizing maintenance . . . is adaptable to any type of slasher drive . . . has factory calibrated ranges that extend its applications to include virtually all combinations of fibers, their blends and sizings.

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Like all Brown products for the Textile Industry, the *Moist-O-Graph* controller is backed by a nation-wide organization of factory-trained installation and service engineers . . . which means that start-ups require a minimum of mill attention.

For detailed information, write for copies of Data Sheets 8.1-37, 8.1-4A and 8.1-27 . . . or call in your local Honeywell engineer.

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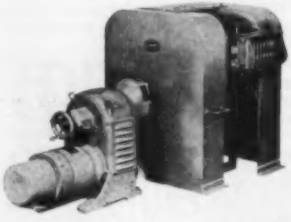

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Actuating Valves

A new line of valves for actuating air or hydraulic cylinders has been announced by Ledeen Mfg. Co., 1602 San Pedro St., Los Angeles 15, Calif. The Leeden valves embody the rotating disk construction and are made in three types: for hand-operation, for foot-operation, or for solenoid-operation. The valves are available in 14 different models, in six sizes for five different cycles, and may be used for controlling the flow of air, oil, or water. (U-1)

D.C. Power Supplies

A new line of standard, metal-inclosed d.c. power supplies utilizing selenium rectifier stacks has been announced by General Electric, Lighting and Rectifier Div., Schenectady 5, N. Y. The new conversion equipment is applicable wherever d.c. power is required and may be used for excitation of synchronous motors; operation of d.c. elevators, cranes, and machine tools; and for conversion of a.c. feeders to d.c. The units can be furnished to supply either 125 or 250 volts d.c. from a 208-, 230-, or 460-v. three-phase, 60-cycle a.c. supply. Convection-cooled equipment is available in ratings from 0.75 to 5 kw. Fan-cooled units are rated from 7.5 to 25 kw. (U-2)

Feed-Water Heater

A feed-water heater designed for small manufacturing plants with boiler capacities of 300 hp. or less has been announced by The Swartwout Co., 18511 Euclid Ave., Cleveland 12, Ohio. Known as the Swartwout Junior feed-water heater, the unit utilizes exhaust steam to heat the water before it is delivered to the boiler. Specially designed stainless-steel trays disperse feed water in the form of thin curtains over a large area to permit exhaust steam to give up its heat quickly and evenly. According to the manufacturer, a savings of 1% in fuel will result from each 11° F. increase in feed water temperature by use of exhaust steam. (U-3)

High-Speed Synchronous Generators

A new line of Tri-Clad synchronous generators, available in four basic designs with ratings from 1.875 to 50 kva., has been announced by General Electric, Small and Medium Motors Div., Schenectady, N. Y. The generators have frequency ratings of 60 and 400 cycles and are designated as types ATI, ASI, and ATB. Three standard types of 60-cycle generators are offered. They provide a range of characteristics for several different categories of voltage regulation and motor-starting requirements. Variations of the basic machines are available with special

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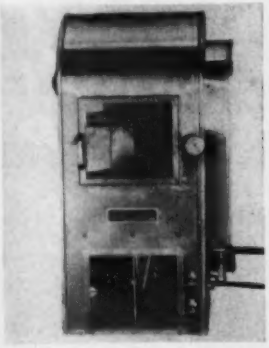

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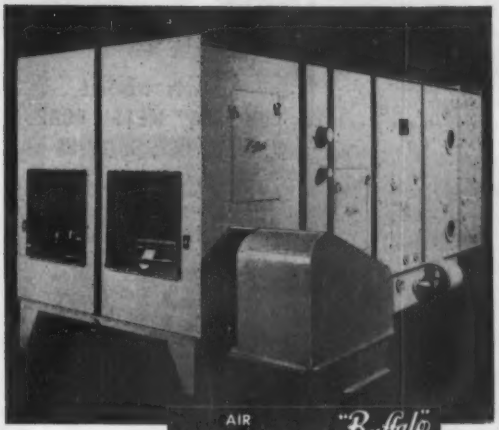

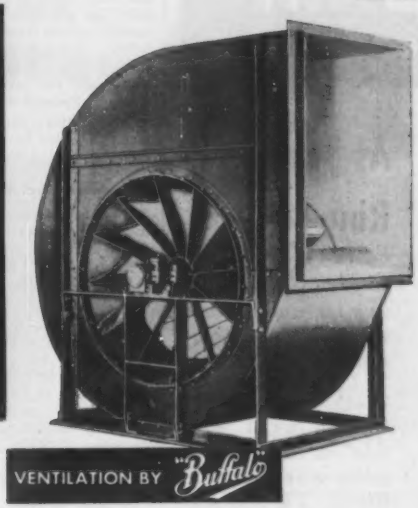

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Often, for comfort or process control, ventilation will do the job. You can exhaust hot, stale air from a working area, or blow in fresh air. Moreover, air circulation by itself has a cooling effect. BULLETIN 3675, below, describes the widely used "Buffalo" Limit-Load Fan, your most efficient method of ventilating large areas. WRITE FOR YOUR COPY, and find out from your nearby "Buffalo" Engineer the many ways you can put ventilation to work in your plant!

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characteristics for special applications. (U-4)

Improved Swivel Caster

A new, patented, Lock-Weld construction, double ball-race, pressed-steel, series-23, swivel caster line has been announced by Fairbanks Co., 393 Lafayette St., New York 3. The caster is available in 4-, 5-, and 6-in. sizes. The new design eliminates the non-rigid, three-piece, king-pin assembly which is said to cause most caster failures. Rigid alignment of all parts provides greater strength, easier swiveling, and longer life, according to the manufacturer. Pressure lubrication is provided by Zerk fittings, and wear on axle is said to be prevented by balanced steel spanner bushings. (U-5)

Mechanical Remote Control

A new, improved mechanical remote control for variable-speed electric power drives has been announced by Sterling Electric Motors, Inc., Los Angeles 22, Calif. This remote control is designed for use on any of the company Speed-Trol power drives; and is available in a variety of types, such as extended flexible-cable, extended-rod with universal joint, right-angle bevel-gear with extended rod, chain-and-sprocket, or a combination of any or all types. A remotely located speed indicator with handwheel is also available with any type. (U-6)

Motor-Driven Scraper Strainer

A new pipe-line scraper strainer has been announced by Sarco Co., Inc., Empire State Bldg., New York 1. Inside the cylindrical screen of the strainer, a motor-driven scraper blade rotates and scrapes off the dirt as quickly as it is trapped. The scraper strainer is said to eliminate shut-downs and the job of removing and cleaning screens. A closer-mesh screen may be used if needed to assure complete removal of foreign particles, solids, or scums from any fluid without interrupting the flow. (U-7)

New Induction-Regulator Line

A complete new line of three-phase, dry-type, induction voltage regulators for regulated three-phase power at low voltages has been announced by General Electric Co., Transformer and Allied Products Div., Schenectady 5, N. Y. The line includes both self-cooled and forced-air-cooled regulators in standard 10 and 20% ranges of regulation. The line is offered in ratings from 120 to 600 v, and from 12 to 85 kva. Housed in an all-steel, ventilated cabinet, the unit is protected from excessive dust collections by the cabinet design. (U-8)

Tilting Motor Base

A new light-weight, adjustable, tilting motor base for use with fractional motors up to one hp. has been announced by Lovejoy Flexible Coupling Co., 5266 West Lake St., Chicago 44, Ill. The base is adjustable in width, and length to accommodate all sizes and types of fractional-horsepower motors. The company states that this is the lowest-priced adjustable

DARY
Ring Travelers

As Seen From Ring-side . . .

Just how important is ring traveler performance in the spinning and twisting picture?

Well, if you could spend a day at "ring-side" in the countless mills where *DARY RING TRAVELERS* are at work, you'd see for yourself how these superior travelers play a vital production role in all kinds of requirement situations . . . yes, dependable ring travelers are key factors in a successful operation . . . and—you can *always* depend on *DARY RING TRAVELERS!*

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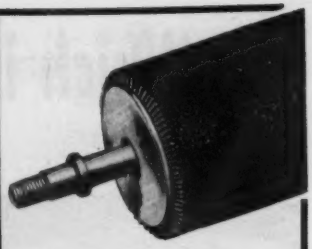

Learn about
"INDUSCO" METAL CORE FURNISHER BRUSHES

- THE SARAN-WOUND NYLON BRISTLE is held firmly by a solvent resistant cement. Bristle is guaranteed not to come out.
- NO WIRE OR OTHER WINDING METAL is used to come loose and damage print rolls or blankets on blanket washers.
- BRISTLES ARE DISTRIBUTED EVENLY over the whole surface of the brush leaving no open spaces as in tufted construction. Gives good coverage for blotch designs.
- LIGHT IN WEIGHT for easy handling, water tight to prevent corrosion. Balanced.

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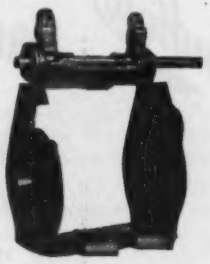

Recondition your CONER-HEADS

Style #50 Universal Coner Heads can be reconditioned with bronze bushings, new shaft and new pulley at a great saving to you.

Write for prices and full details.

Wayne Manufacturing Co.
Honesdale, Pa.

Manufacturers of Textile Mill Supplies

This material saves you money

PC FOAMGLAS
the long life insulation

HERE, PC Foamglas is shown in core wall construction—laid up between inner and outer masonry walls. Control of humidity and temperature is more easily and economically maintained in mills where strong, rigid Foamglas blocks are used to bar vapor and heat transfer.

THE wide acceptance of Foamglas—evidenced by its use in so many prominent mills, is mainly due to two facts: 1. Composed of air enclosed in glass cells, it is an unusually *effective* insulation. 2. Being glass, hence highly resistant to elements that destroy other materials, Foamglas gives long lasting insulating service, without costly repairs, maintenance or replacement. That makes it an unusually *economical* insulation.

Foamglas is being used successfully in walls and floors, roofs and ceilings of many prominent mills, to maintain desired temperature and humidity levels. It helps to reduce fuel cost for heating . . . helps to minimize operating costs and wear and tear on air-conditioning equipment. When properly installed, PC Foamglas retains its original insulating effectiveness.

When you are facing involved insulating problems, consult Pittsburgh Corning specialists for prompt solutions. Meanwhile, why not send for our recently published booklet? It contains many illustrations, specifications and easily understandable instructions for the common uses of PC Foamglas Insulation. Just mail the convenient coupon and we shall be glad to send you a sample of Foamglas and a free copy of the booklet.

▲ ***THIS DIAGRAM SHOWS*** how a group of glass bubbles which contain still air, can form a continuous, cellular material. PC Foamglas, the cellular glass insulating material, consists of glass and still air, makes an excellent barrier to heat travel. And, being glass, Foamglas has unusually high resistance to moisture, vapor, fumes and acid atmospheres, is non-combustible, odorless and verminproof. In this cellular glass construction lies the secret of the long lasting insulation value of PC Foamglas.

Pittsburgh Corning Corp.
Dept. V-81, 307 Fourth Avenue
Pittsburgh 22, Pa.

Without obligation on my part, please send me a sample of Foamglas and your FREE booklet on the use of PC Foamglas Insulation for Commercial, Industrial and Public Buildings.

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. . . when you insulate with FOAMGLAS . . . the insulation lasts!

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Two Great Models for TESTING MOISTURE CONTENT

in • wool
• cotton
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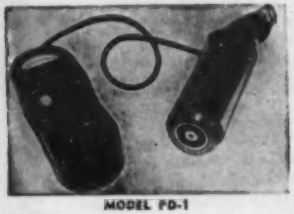
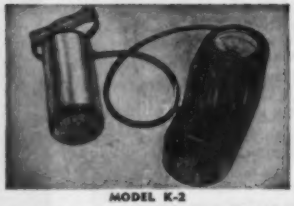
• nylon



MODEL FD-1

for textiles in loose or compressible forms—3" penetration.



MODEL K-2

for textiles in cones, rolls, beams and similar forms.

10-DAY FREE TRIAL!

Try one of these moisture testing instruments for 10 days—use it, test it and prove its superiority. Send samples, moisture range and Purchase Order to cover trial period. No obligation!

Quick, Accurate Readings

In less than 3 seconds you can test moisture content of practically all types of textile materials, including cotton, wool, rayon and nylon in fabrics, packages and loose forms.

This portable instrument is designed for "on the spot" checks in your plant. Moisture Register is easy to operate—requires no technical knowledge or complicated figuring. Cost is negligible in comparison to advantages. Write today for complete details. Specify type of material to be tested.

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ELECTRONIC MOISTURE REGISTER
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motor base. In addition to using it with variable-speed pulleys, the base also acts as a belt tightener and can be used for easy belt changing on cone stop pulleys. (U-9)

Wheeled Fire Extinguisher

Designed for combatting flammable-liquid and electrical fires in industrial plants and textile mills, a new wheeled dry-chemical fire extinguisher with 150-lb. powder capacity has been announced by Walter Kidde & Co., Inc., Belleville, N. J. The extinguisher is recommended for use against fires which are too severe or extensive for extinguishment with the 20-lb. or 30-lb. portable type of dry-chemical unit. Several features make the larger model easy to handle, highly dependable, and safe. The two-wheel mounting permits one man to guide easily into position the two large, upright steel cylinders of the unit. (U-10)

Booster-Bath Analysis

Booster baths containing sodium hydrosulphite, sodium sulphide, and sodium hydroxide may be analyzed by a recently developed method that is simpler and faster than previous methods.

1. Sodium hydrosulphite

Place 11.42 g. of potassium indigo disulphonate powder in a 1,000-ml. beaker. Add 325 ml. of distilled water. While stirring, add 525 ml. of 10% sulphuric acid.

Place the beaker on a steam bath and stir the contents frequently until they are completely dissolved (1 to 2 hr.).

Remove the beaker from the steam bath and let it cool to room temperature. Dillute to one liter with distilled water. Mix the solution thoroughly and let it stand for at least ½ hr. before it is used. Keep it in a dark bottle with a tight stopper in place.

The procedure for testing a caustic-soda booster for sodium hydrosulphite is as follows:

Put 5 ml. of standard indigo solution in a 250-ml. Erlenmeyer flask, and add 2 ml. of standard zinc solution. Dilute with 75 ml. of water.

Titrate as rapidly as possible with a sample taken from the booster bath until one drop causes the blue color of the indigo to change or disappear.

(For concentrated vat dyes, use 25 ml. of indigo solution, 10 ml. of zinc solution, and 400 ml. of water.)

To calculate the sodium hydrosulphite by volume, use the formula: (ml. of indigo solution x 0.25) ÷ ml. of the reduced vat-dye solution.

2. Sodium sulphide

Dissolve 16.75 g. of pure zinc in a small excess of HNO_3. Neutralize with NH_4OH, and add enough

HALLOWELL

Steel Collars

HALLOWELL Solid Steel Collars, functionally proportioned throughout . . . precision-machined so faces run perfectly true . . . are beautifully polished all over . . . yet they cost less than common cast iron collars. 3" bore and smaller are made from Solid Bar Stock. To make sure the collar won't shift on the shaft, they are fitted with the famous UNBRAKO Knurled Point Self-Locking Socket Set Screw—the set screw that won't shake loose when once tightened. HALLOWELL . . . "buy word" in shaft collars . . . available in a full range of sizes for IMMEDIATE DELIVERY.

Write for name and address of your nearest HALLOWELL and UNBRAKO Industrial Distributors.

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STANDARD PRESSED STEEL CO.
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WATER TREATING PROBLEMS?

The efficiency of N-Sol activated silica coagulating processes has answered the problem for many for either raw water or waste water treatment. N-Sol produces water with the sparkle of spring water. Write for Use File 52-19.

Activated silica sol is made in your mill by reacting N* Silicate with ammonium sulfate, chlorine, alum or sodium bicarbonate.

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SILICATE P's & Q's

For more pointers on PQ Textile Processes write PQ.

SOLUBLE SILICATES FOR INDUSTRY

PHILADELPHIA QUARTZ CO.
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New Taylor
VISCOSITY RECORDER

catches changes in size viscosity... prevents improper slashing

FRONT VIEW

REAR VIEW

THIS new Taylor Size Viscosity Recorder will save you money by stopping improper slashing before it starts. It's a simple packaged unit that continuously records size viscosity directly in centipoise. Detects any variations before they can cause trouble. Tells your exact size viscosity at all times.

Precalibrated for immediate use. Writes a continuous, easy-reading chart record in direct viscosity units. No bother from intermittent readings or complicated conversion factors.

Easy to install and maintain because it comes to you in a packaged panel board unit. Can be quickly mounted anywhere near a size line. Only piping requirements are size 'in', size 'out', steam and drain. Valved for easy steaming out during cleaning. No clogging—no gumming of machinery—no delicate parts to cause trouble.

Available in a variety of ranges to accurately record every size viscosity in the textile industry. Your Taylor Field Engineer has complete details on this new Taylor Size Viscosity Recorder. Ask him! Taylor instrumentation has been cutting slashing costs since 1919. May we help you now? Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

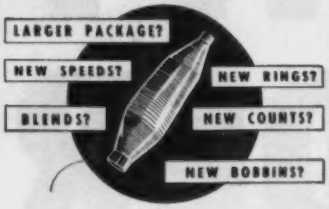
Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

Taylor's Centennial ACCURACY FIRST SINCE 1851

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

U. S. RING TRAVELERS

What YARN changes are you making?



What TRAVELER changes will they require?

Wherever you feel a change in travelers would benefit, let U. S. men make suggestions and furnish test samples.

Prompt shipments from stock at Greenville, Providence

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Concord, N. C.—Box 83—Phone 8366

C. W. Smith, H J. Smith
Providence—Box 1187—Gaspee 1-0100

NH$_4$OH to redissolve the precipitate formed plus a 50-ml. excess. Dilute to 2,000 ml.

Now, make about a 10% solution of nickel ammonium sulphate, and add a slight excess of NH$_4$OH.

To test for sodium sulphide put 25-ml. of solution in a 400-ml. beaker and dilute to 250 ml. with distilled water. Run in the zinc solution. The end point is reached when a drop of solution in the beaker added to three drops of the nickel-sulphate indicator on a white spot plate no longer forms a black precipitate.

Formula for calculating the sodium sulphide: (ml. of zinc solution x 100) ÷ ml. of sample.

3. Sodium hydroxide

Add 10 ml. of the solution to 400 ml. of water. Add 15 ml. of 10% $BaCl_2$ solution. Titrate with HCl until no pink color develops on a spot plate when a drop of phenolphthalein and a drop of solution are mixed.

Formula: (ml. HCl x 0.4) ÷ ml. of sample = total alkalinity as percentage of NaOH by volume.

Actual NaOH by volume is obtained by correcting for the sodium sulphide content. The correction formula is: total alkalinity − % Na_2S × 0.51 = % actual NaOH. *The Technical Bulletin, Dupont*

New Dyes and Chemicals

(Continued from page 172)

fastness to light make it useful for wool where superior fastness is demanded.

Wool Unions and Effect Threads. Solid shades on blends containing wool, especially those containing wool and spun rayon, are said to be obtained by the application of this dyestuff by padding. When unions are dyed from a long liquor, cotton and especially rayon and acetate are left practically white if salt is omitted from the bath. However, nylon effect threads are dyed distinctly yellower.

Silk. Algosol Golden Orange IRR-CF gives the same fastness properties on silk that it does on wool. The dyeing method for silk, however, is modified slightly by the addition of more acid to promote better exhaustion of the lueco ester on the silk.

Printing. The Algosols are equally well applicable for printing by either machine-roller or screen methods. A great variety of fabrics made from either cellulosic or animal fibers may be printed with these dyestuffs to obtain the same fastness properties as obtained in dyeing. This dyestuff is recommended for printing upholstery or drapery fabrics, table cloths, shirtings or play suits, and are also suitable for over-printing with caustic soda for plissé effects.

Resist Dyeing. Although this dyestuff is

FINDS KEY . . .

. . . to Buying Information

As secretary of the National Association of Hosiery Manufacturers, Inc., New York, Mr. R. C. Ball receives many requests for information concerning suppliers from manufacturers engaged in the textile industry.

To simplify his task and save valuable time, he finds McGRAW-HILL PRE-FILED TEXTILE CATALOGS the "key" to locating suppliers and information concerning their product.

"We use TEXTILE CATALOGS frequently in looking up sources of supply for many inquiries," says Mr. Ball.

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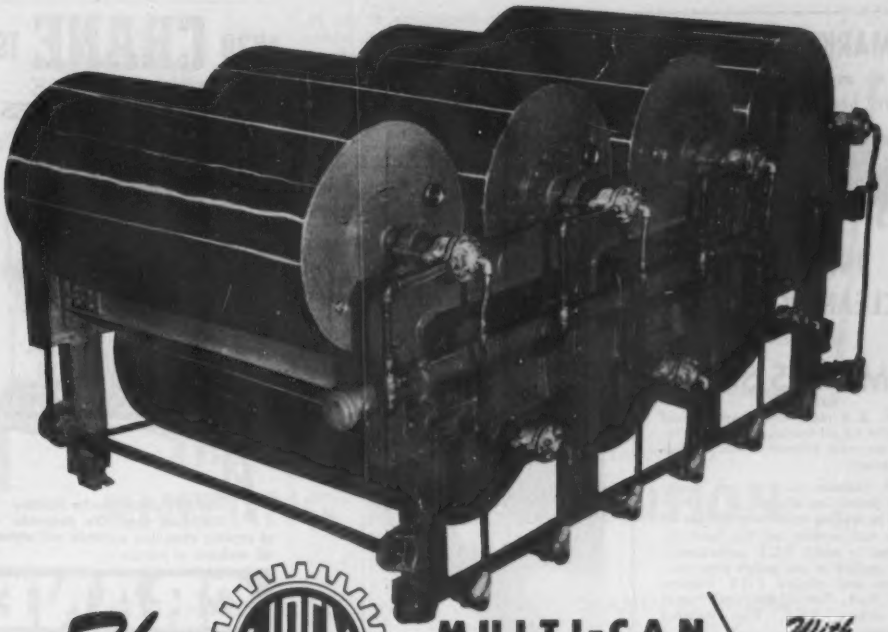
BUY U.S. SECURITY BONDS NOW!



The WPF&M MULTI-CAN SLASHER

With 5, 7, 9, or 11 30" CYLINDERS

The WPF&M Multi-Can Slasher is designed to produce quality warps from fibers suited to this type slasher, at high speed and low operating costs.

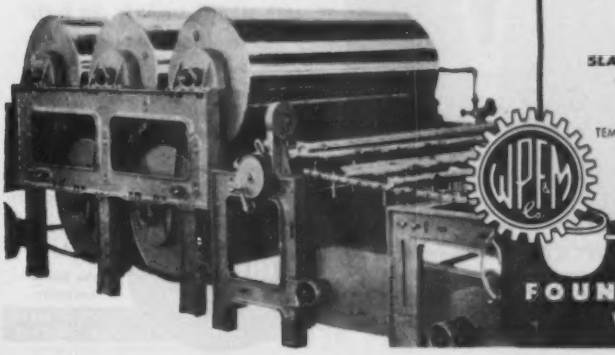
Furnished with either 5, 7, 9 or 11 thirty-inch diameter cylinders, the WPF&M Multi-Can Slasher can be adapted and equipped to fill any mill requirement.

If existing head ends and size boxes are in good condition, they can easily be adapted for use with the Multi-Can cylinder section. Or, the WPF&M Multi-Can Slasher can be furnished complete with any of several types of modern WPF&M head ends, drives and size boxes.

The polished, stainless steel cylinders, with welded-in steel heads, can be operated at pressures up to 35 psig. Rotary packless steam joints and sealed, self-aligning anti-friction bearings provide smooth, trouble-free operation. Each cylinder is equipped with vacuum valve, thermometer, condensate trap and flexible pipe connections. Temperature control can be provided for manifold, group or individual cylinder control.

Roller chain sprocket drive with tension idlers is smooth, quiet running. Either mechanical or electrical type tension control between cylinders and size box, and head end and cylinders are available. Heavy rigid cast iron frames, accurately machined to maintain alignment, support the cylinders.

The WPF&M Multi-Can Slasher is one of the complete line of modern Slashers manufactured by the West Point Foundry & Machine Company—specialist in Slasher Room machinery and equipment.



WPF&M WARP PREPARATION MACHINERY

STANDARD 2 and 3 CYLINDER SLASHERS
MULTI-CAN SLASHERS
WPF&M HI-SPEED 4 CYLINDER SLASHERS
CALLAWAY SAMPLE SLASHER

SLASHER MODERNIZATION EQUIPMENT

HI-SPEED HEAD ENDS WITH STRETCH CONTROL
STANDARD WPF&M HEAD ENDS
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"X MARKS THE SPOT"

An expression you will never hear in mills that use

D.C.F. REGISTERED

INDUSTRIAL CLEANING FLUID

Non-Inflammable

REMOVES SPOTS

D.C.F. is a rapid dry cleaning fluid suitable for all fabrics. It will not injure the most delicate fabrics nor fast dye colors.

D.C.F. contains no acids—no caustic—no grease—no alkalies. It has been used by leading mills for more than 20 years and nothing yet has been developed to match D.C.F. performance. It is packed in one gallon glass containers and shipped F.O.B. Hudson, New York. Try it and you'll never be without D.C.F. Your inquiries solicited

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SPECIALISTS IN TEXTILE FEEDING MACHINERY SINCE 1863

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not satisfactorily dischargable, it can be readily resisted to give excellent whites when subsequently padded. The virtual freedom of this dyestuff from copper and manganese permits its use on materials that are to be rubberized.

TEXTILE *Equipment* NEWS

(*Continued from page 170*)

Silicone-Treated Tissues Clean Goggles, Glasses

SILICONE-TREATED TISSUE, called Magic Lens Tissue, for cleaning goggles and glasses have been developed by General Electric Co. (Silicone Div.) and Silicone Paper Co. of America, Inc., 230 Park Ave., New York. Sheets are interfolded for handling in a single dispenser, if desired.

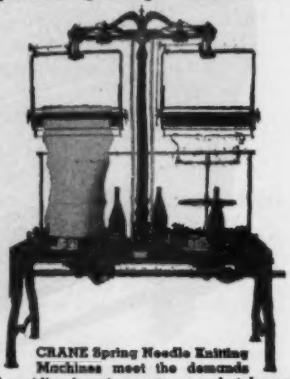
Scissors Have Flat Points, Curved Blades

WEAVER'S SCISSORS with curved blades and fine flat tips to assure close cutting are available from Robert Viegelmann, 4 Theresa Place, Staten Island, 1, N. Y. A full line of sizes and shapes for every weaving and knitting mill use are available.

1870 CRANE 1951

SPRING NEEDLE KNITTING MACHINES

Speed - Quality - Low Cost



CRANE Spring Needle Knitting Machines meet the demands of rapidly changing patterns and styles on all weights of fabrics.

CRANE MANUFACTURING CO. LAKEPORT, N. H.

IT'S WHAT IS IN THE DRUM THAT MAKES THE DIFFERENCE

There is a REASON WHY

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with related products get better results at lower cost

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An Invitation to the Entire Knitting Trade

Announcing

The 40th (and by far the largest!) KNITTING ARTS EXHIBITION

Under the Auspices

NATIONAL ASSOCIATION OF HOSIERY MANUFACTURERS

APRIL 30 thru MAY 4, 1951 • **AUDITORIUM ATLANTIC CITY, N. J.**

It's keyed to your PRESENT problems

Never have manufacturers faced so many problems . . . so many *complex* problems! Only one thing is sure: All must improve production and at the same time cut costs where possible. This calls for the maximum efficiency of operation and management. One needs to be fully familiar with the latest equipment, materials, methods and services.

At Atlantic City, the week of April 30, the great Auditorium will be turned into the world's largest knitting mill.

More than 200 leading manufacturers of knitting, winding, dyeing, sewing, boarding and other machinery; furnishers of mill supplies, yarns and allied products will show their newest machines, processes, products and mechanical features.

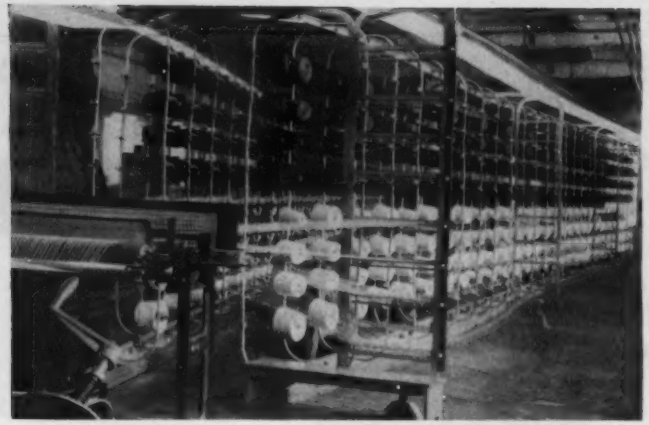
EVERY MILL OFFICIAL, COMPANY EXECUTIVE, PURCHASING AGENT, SALES MANAGER AND KEY MEN IN ALL PHASES OF MILL OPERATIONS WILL FIND SOMETHING HELPFUL AT THIS GREAT EXHIBITION.

MAKE YOUR PLANS NOW TO ATTEND. Atlantic City provides excellent hotel accommodations at a wide range of rates — attractions for relaxation and entertainment.

Tickets may be secured free from exhibitors or from the management of the Knitting Arts Exhibition.

For further information write

ALBERT C. RAU, Manager, 332 Park Square Building, Boston, Mass.



CONES FOR NEW PATTERNS can be placed in the creel while the preceding pattern is running; thus downtime is virtually eliminated.

New MAGAZINE CREEL Cuts Costs, Raises Speed

► New creel has cut warping costs by 30% and doubled warping speed in one woolen mill—Speeds from 200 to 400 yd. per min. are regularly obtained—New pattern can be set up while preceeding one is being run.

INITIAL STUDIES of the operation of a new magazine creel recently installed in a leading Pennsylvania woolen-manufacturing plant show that it has cut the warping costs by more than 30%, and, at the same time, more than doubled warping speeds. The McBride SRM creel, developed by Edward J. McBride Co., Inc., Philadelphia, Pa., has also solved a number of production problems for the company.

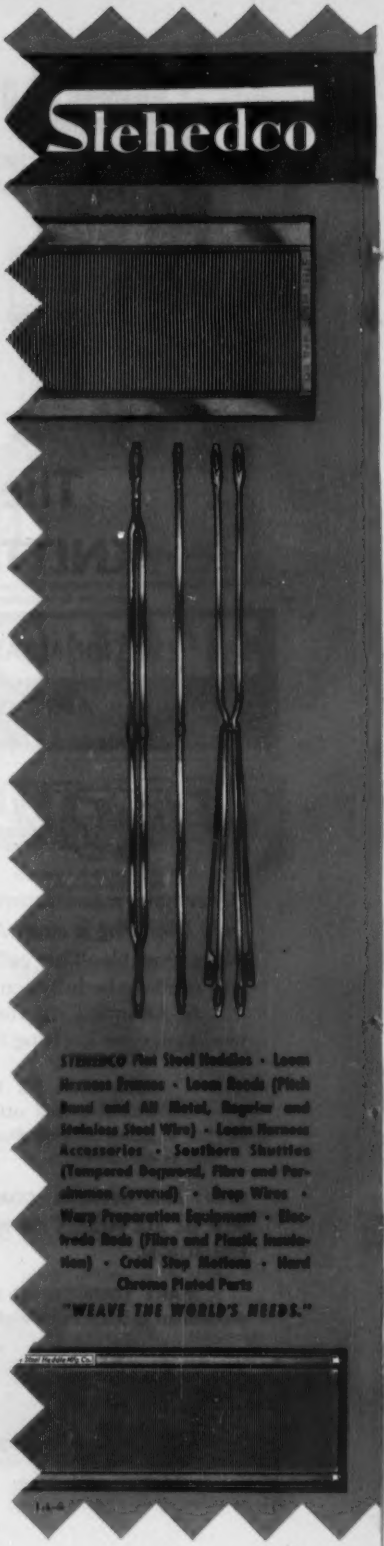
The method that it replaced required the use of small, 40-end creels for transferring yarn onto jack spools. These spools were in turn placed in the larger creel, reeled onto the beaming frame and then onto the loom beam.

In addition to being slower, this method caused a number of difficulties, especially the necessity for frequent end tying that took time and left knots. Maximum speeds obtainable with the old system ranged from 150 to 180 yd. per min. Also, 2 to 3 hr. were required for the setting up of the new pattern—all lost time from the production viewpoint. The use of different sizes and types of yarn packages was difficult and often required additional winding operations.

The new magazine creel is designed to permit the full run without the necessity of end tying and with practically no downtime. Speeds from 200 to 400 yd. per min. are regularly obtained, and the mill's superintendent believes that speeds twice as high could be consistently obtained if lighter yarns were used.

The magazine feature of the creel is reported to permit a complete change of the new pattern on the creel while the preceeding pattern is being run. Also, it is claimed, a special revolving spindle helps speed the tying of transfer tails to the new packages, thus increasing the creel efficiency and permitting still faster creel changes.

Almost no time at all is said to be lost in making a pattern change, so that the machine is equally satisfactory for frequent pattern changes and for long runs of a single pattern.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NO LOOM *EVER* OUT-RUNS A "SOUTHERN" SHUTTLE . . .

. . . because—world famous "Southern" Shuttles with their—PLUS—design and construction features have the ruggedness and durability to withstand the violent impacts encountered in present day high speed loom operations.

Racing, back and forth, at 40 M.P.H. speeds, making 200 and more picks a minute, perfectly balanced, precision made Southern Shuttles smoothly handle the most delicate and tender yarns without breakage and fray—they unify loom production performance—reduce waste, cut costs and improve the quality of the run.

A member of the great Steel Heddle Family of products, Southern Shuttles always measure up to the quality standards for which all SteHedCo Loom Harness Equipment is noted. They're made in "the World's Largest *Single*-Unit Shuttle Plant" where Shuttle design experts are constantly solving major Shuttle problems, such as: strength of resistance versus mass velocity—and, the results of their efforts is expressed in the eyes, the tips, the grips and numerous other features which always enable Southern Shuttles to set new performance records regardless of the speed of the looms.

Modern Mills . . . Modernize with "Southern"—the Shuttles that "Weave the World's Needs."

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1-54

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SCHIEREN BELT
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That Maintains
Belt Tension

SCHIEREN DUXBAK RAYON-CORE FLAT LEATHER BELTING has a layer of rayon tire cord between two layers of leather. The result combines the pulley gripping ability of first quality leather with a stretch-resisting core that maintains initial tension for months or even years without shortening of belt. This feature increases machine output and reduces maintenance. Supplied as endless belts or with prepared laps or in rolls.

Many RAYON-CORE BELTS are now being used on strippers and on the eccentrics of cards. Ideally suited for pivoted-base or automatic tension-control drives, mule spinning frames, winders and circular knitting machines. Belts have run for three months or longer without being taken up, dressed or adjusted.

OTHER SCHIEREN PRODUCTS for textile mills include the new, patented, Duxbak, endless check strap, which outlasts ordinary checks 3 to 1, all types of straps, pickers, aprons, discs; Rayon-Core leather V-belts; etc.

Write for complete information or price quotations on any of the above products.

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SC 36

News of the month

Yarn-Structure Important. The preoccupation of the textile industry with yarn number, rather than with the filament number and arrangement along and across the yarn, should in the future be decreased if fibers are to be intelligently engineered into yarns (and yarns, in turn, into fabrics), said Prof. E. R. Schwartz of Massachusetts Institute of Technology before the January meeting of the Textile Society of Canada in Montreal. The placement of individual fibers and yarns is important. Of the 40-, 60-, and 120-filament-type rayon yarns commercially produced, the 120-filament construction is the only one exactly corresponding to the requirements of stable packing. Fiber placement in single yarns is difficult to control. Another concern is the proper combination of single yarns of different fiber content into plies where placement of yarn units can be more easily controlled.

Electrical Resistance Is Measurable. A resistance tester, companion instrument to the static tester developed by the Jackson Laboratory that was described at the AATCC national convention last fall [TW, Dec., '50, p. 135], has been developed by the Du Pont organization. The resistance tester measures over a wide range of ohms the electrical resistance of fibers, fabrics, and films, making it possible to evaluate the tendency of any such materials to accumulate and hold electric charges. Involved is the measurement of the IR drop in a known resistance, in which I equals the leakage of current through the sample. The surface electrical resistivity is obtained by multiplying the observed resistance by the ratio of the width of the sample to the distance between the electrodes. Value of the data depends upon close control of the humidity. Accuracy is greatest below resistivities of 50,000x 108 ohms. In contrast, accuracy of the static tester falls off with test speci-

TEXTILE CALENDAR

ASTM, D-13, spring meeting, Park Sheraton Hotel, New York, March 14 to 16, 1951.
Conference on Industrial Personnel, Columbia University, New York, March 19 to 23, 1951.
TOE of Ga., spring meeting, Georgia Tech, Atlanta, Ga., March 24, 1951.
ACME, annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va., March 29, to 31, 1951.
AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., March 30, 1951.
Lyon International Fair, Fair Grounds, Lyon, France, March 31 to April 9, 1951.
ASME, textile meetings, Atlanta Biltmore Hotel, Atlanta, Ga., April 3 and 4, 1951.
International Utrecht Industries Fair, Fair Grounds, Utrecht, Holland, April 3 to 12, 1951.
Swiss Industries Fair, Fair Buildings, Basel, Switzerland, April 7 to 17, 1951.
Milan Fair, Fair Grounds, Milan, Italy, April 12 to 29, 1951.
Virginia-Carolinas Quality Control Group, spring meeting, School of Textiles, N. C. State College, Raleigh, N. C., April 13, 1951.
American Society of Lubrication Engineers, national convention, Bellevue-Stratford, Philadelphia, Pa., April 16 to 18, 1951.
National Packaging Exposition, Atlantic City, N. J., April 17 to 20, 1951.
CATCC, Quebec Sect., Mount Royal Hotel, Montreal, Que., April 21, 1951.
International Textile Exhibition, Parc des Expositions, Lille (Nord), France, April 28 to May 20, 1951.
National Assn. of Hosiery Mfrs., annual meeting, Claridge Hotel, Atlantic City, N. J., April 30, 1951.
Hosiery Industry Conference, Claridge Hotel, Atlantic City, N. J., April 30 and May 1, 1951.
Knitting Arts Exhibition, Atlantic City Auditorium, Atlantic City, N. J., April 30 to May 4, 1951.
American Material Handling Society, materials-handling conference, International Amphitheatre, Chicago, Ill., April 30 to May 4, 1951.
National Materials Handling Exposition, International Amphitheatre, Chicago, Ill., April 30 to May 4, 1951.
British Industries Fair, Earls Court Hall, London, England, April 30 to May 11, 1951.
Textile Institute, annual conference, Brighton, England, May 1951.
AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., May 4, 1951.
Greater New York Industrial Show, 71st Regiment Armory, New York, May 7 to 11, 1951.
AATCC, Hudson-Mohawk Sect., Albany, N. Y., May 11, 1951.
Cotton Mfrs. Assn. of Georgia, annual convention, Sheraton Plaza and Princess Issena Hotels, Daytona Beach, Fla., May 16 to 18, 1951.
Prague International Fair, Prague, Czechoslovakia, May 20 to June 3, 1951.
American Society for Quality Control, annual convention, Hotel Cleveland, Cleveland, Ohio, May 23 and 24, 1951.
Canadian International Trade Fair, Toronto, Ontario, May 28 to June 8, 1951.
Seattle International Japanese Trade Fair, Edmundson Pavilion, Seattle, Wash., June 15 to 30, 1951.
ASTM, annual meeting, Atlantic City, N. J., June 18 to 22, 1951.
STA, annual convention, Mayview Manor, Blowing Rock, N. C., June 21 to 23, 1951.
Chicago Yarn Men's Club, golf outing, Elmhurst Country Club, Chicago, Ill., June 28, 1951.
American Chemical Society, diamond jubilee, New York, Sept. 3 to 7, 1951.
AATCC, annual convention, Statler Hotel, New York, Oct. 17 to 19, 1951.
Packaging Institute, annual forum, Hotel Commodore, New York, Oct. 22 to 24, 1951.

1952

Plant Maintenance Show, Convention Hall, Philadelphia, Pa., Jan. 16 to 19, 1952.
Textile Wet Processing Equipment and Supplies Exposition, 71st Regiment Armory, New York, April 1952.

1954

American Textile Machinery Exhibition, sponsored by National Association of Textile Machinery Manufacturers, Atlantic City Auditorium, Atlantic City, N. J., April 26 to May 1, 1954.

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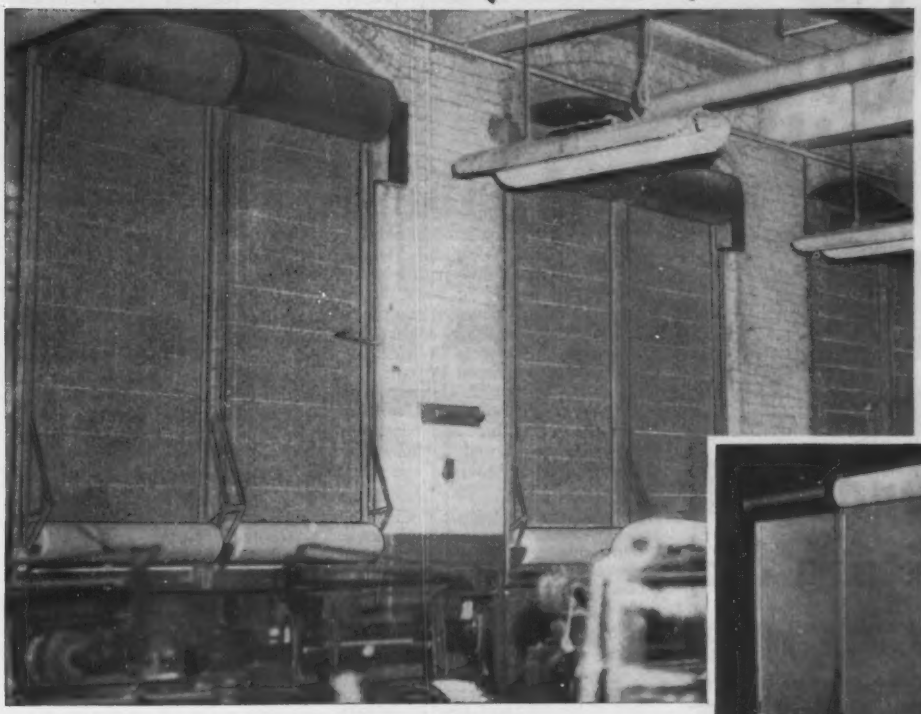

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Auto-Airmat . . . the only practical automatic, self-cleaning filter . . . developed especially for textile mill service

Costly maintenance problems of primary air cleaners in textile mills are finally solved by AAF's new Auto-Airmat. It eliminates expensive overtime cleaning jobs and reduces the disposal *headache* to a minimum.

This automatic, self-cleaning dry-type air filter employs low cost Airmat* paper as the cleaning media. Installed in rolls at the top of the Auto-Airmat, the paper moves on a continuous screen down the face of the filter and is rerolled automatically at the base. The collected lint and dust is rolled up with the paper media, for easy disposal. Rate and frequency of screen travel and paper media usage is automatically controlled by the lint concentration in the air to be cleaned.

Whether you are manufacturing textiles or processing fibrous material, the Auto-Airmat will do your filtering job at lower cost and with greater efficiency. For complete information call your AAF representative or write us for Engineering Bulletin No. 234.

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mens of general low static propensity.

Loom-Manufacturers' Plans. A price of $7,910 for the 80-in. Warner & Swasey weaving machine has been set by the Cleveland, Ohio, manufacturer —exclusive of harness, motor, and other accessories. The 110-in. precision-made weaving machine has been priced at $8,600. Production of the new 240-ppm. machines will be held down during the present emergency, however. Orders on hand already extend into 1952. Meanwhile, Draper Corp., Hopedale, Mass., recently made known that it will cut down on the manufacture of looms, starting next month. By the beginning of next year, production of complete Draper looms will have been reduced by half. The company's spare-parts business will continue full-speed ahead, however, as the firm gets more and more into the manufacture of mobilization-needed machinery tools.

Choosing a Detergent. Chemical analysis, surface-tension measurements, wetting tests, and standard soil-cloth tests cannot alone help a mill technician to choose the best detergent for the job on hand, said Sidney M. Edelstein of Dexter Chemical Corp., at a recent meeting of the Northern New England Section of the AATCC. Chemical analysis can reveal the structure of the detergent and can indicate certain general properties and reactions to be expected; but it cannot indicate whether one detergent will work better than another, unless both are of the same type. Surface-tension measurements relate merely to the solution's ability to displace air—not to the primary job of displacing dirt, grease, and other soil. Wetting tests can be useful, though limited, as a means of control whereby wetting curves may be plotted and tests made to determine the concentration of a detergent. Standard soil-cloth tests take in too many variables to permit money-value comparison. The most beneficial tests can be conducted, the speaker concluded, when actual plant operating conditions are simulated in a miniature scouring train in a laboratory.

"Participating" Fellowships. Textile Research Institute, Princeton, N. J., has set up a system of outside support of programs of study in fields in which donors may have a primary interest. The new policy requires that the research requested by the donor be consistent with the program of fundamental textile research of the Institute. The participating-fellowship program also requires that the research problem be suitable for thesis assignment, that research results be publishable, that any patents resulting from the work be handled according to TRI policy, and that a minimum of two years be given to the sponsorship. The cost to the donor of a participating fellowship is seen as $5,000 per year, plus any special equipment needed, plus travel expenses of the Fellow at any time for consultation with the donor.

Scouring-Waste Research Machine. A laboratory wool-scouring machine has been constructed at Lowell Textile Institute, Lowell, Mass., for the purpose of studying waste effluents and their best treatment over a wide range of conditions. The machine, almost 7 ft. long, has a production capacity of about 25 lb. of wool an hour. All variables are controlled, from the feed apron through recirculation and temperature controls. Along with the investigation of the best waste treatment of effluents resulting from the conventional scouring operations, the machine can give details of the scouring process that may lead to modifications in methods. Studies are being undertaken to make effluent treatment less costly and to render scouring wastes more acceptable to streams.

ITT Plans Ahead. At a recent two-day meeting at the Institute of Textile Technology, Charlottesville, Va., the Institute advisory committee recommended the setting up of short and intensive educational courses for member-mills' supervisory personnel. The courses are planned to take the form of regular summer-school classes, to be conducted by the Institute academic department, headed by Dr. J. L. Vaughn. Cotton-research projects were also reviewed at the meeting. These include better cleaning of cotton, treatments to improve cotton processing, obtaining of processing uniformity, improved spinning methods, studies in yarn imperfections, increasing yarn tensile strength, chemical modification of cotton, and research on new-crop cotton and humidity control.

Chrome-Dye Variation Causes. There are many conditions that can cause variations in shade in chrome dyeing, according to Henry E. Millson of the application-research laboratory of Calco Chemical Div., American Cyanamid Co., who spoke at the recent Mohawk-Hudson AATCC meeting.

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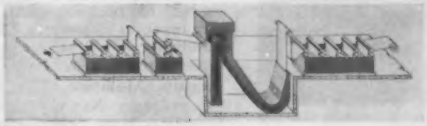

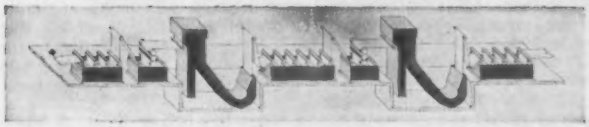

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Introduced by Du Pont in 1943, they're specifically designed to handle heavy fabrics and tightly woven goods—heavy twills, drills, poplins, etc. They speed bleaching, cut costs in chemicals, steam and maintenance. Today, 16 of these systems, incorporating Du Pont principles, are operating in a number of leading mills.

Other types of Du Pont continuous systems, with capacities from 500 to 6,000 lbs./hr., are available. In fact, capacity of Du Pont designed installations operating or under construction is now over 75,000,000 yards per week—more than one-fourth the current annual U. S. production of cotton piece goods!

Let us tell you more about these cost-saving systems. We don't build or sell the equipment. But our Technical Service can help you select the right bleaching system for your requirements of production, type of fabrics to be bleached, utilities, and other economic factors. Bleaching specialists will help you survey your production facilities, make specific recommendations on equipment, give estimates and operating costs. After you decide on a system, Du Pont Technical Service representatives located in leading textile centers will help you start operation and train your technical and operating personnel. This service in no way obligates you.

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NEWS OF THE MONTH (Continued)

Among the conditions most difficult to control are those caused by soluble salts of aluminum, copper, and iron in the dye bath. Metals in the dye bath may not only cause wool to dye tippy, but they may also be the reason for undesirable color changes during processing. The extent of damage in the staple varies considerably, depending on its original location in the fleece. In general, adverse tippy effects caused by metals in the dye bath can be reduced or eliminated by a good leveling agent. The leveling agent prevents the concentration of dye in the tips, and thereby reduces or eliminates the contrast in shade between the tip and body regions.

French Textile Center. A national technical center for the French textile industry, *le Centre Technique Industriel*, has been inaugurated in Paris. Key function of the new Center is to coordinate and direct research in the more specialized research centers at Roubaix, Mulhouse, Rouen, and the *Conservatoire Nationale des Arts et Métiers* in Paris. The Center evolved out of the *Institut Textile de France*, created in 1946. Other functions of the CTI will be (1) an extensive documentation service for all French textile men, (2) a bi-annual bulletin containing original articles and digests of reports on the increasing of productivity, (3) a photostat-microfilm department, (4) a physics laboratory and a chemical laboratory, (5) a raw-materials section, (6) a standardization section, (7) a bi-monthly public-lecture program on technical subjects concerning the industry, (8) a post-graduate training program, (9) the exchange of research results between regional and company laboratories, and (10) the maintaining of permanent contact with foreign textile-research organizations.

Quality-Control Meeting. Five technical discussions will highlight the Virginia-Carolinas quality-control-group meeting scheduled for Friday, April 13, at the School of Textiles in Raleigh, N. C. J. F. Bogdan, director of research, School of Textiles, will talk on neps in cotton. The new SRRI development in opening equipment will be discussed by H. J. Cheatham, head of cotton mechanical-processing division at Southern Regional Research Laboratories, New Orleans, La. W. E. Crooks, plant manager at Celanese Corp. of America, Rome, Ga., will evaluate the use of statistical quality control in enabling a mill manager a know how his organization stands on quality control. A paper on the effect of card lickerin speeds up to 800 rpm. will be presented by Elliot B. Grover, head of yarn-manufacturing department at N. C. State. Percy W. Woodruff (head of quality control, Erwin Mills, Durham, N. C.) and F. H. Martin (head of quality control, Springs Cotton Mills, Lancaster, S. C.) will present findings of their joint investigation of the Shirley Analyzer.

Textile-Lubrication Program. A new industrial-relations committee of the American Society of Lubrication Engineers has been formed and divided into separate groups, one of which will devote itself exclusively to textile lubrication problems. Herbert L. Ortstein, director of processing-research development at Pacific Mills, Lawrence, Mass., heads this textile subgroup. He will coordinate the publication and dissemination of textile reports and findings. Included in the program of the A. S. L. E. national convention to be held at the Bellevue-Stratford Hotel, Philadelphia, Pa., from the 16th to 18th of next month, is a morning session (April 17) that will be devoted to lubrication in the textile industry. Five men in the field are preparing talks for the program.

Radio-Active Isotope Story. A manufacturer of British woolens recently encountered considerable difficulty in obtaining uniformly dyed fabric. Ordinary analysis did not reveal an unusual amount of soap incompletely removed. Dissatisfied, the manufacturer decided to use radio-active tracer techniques. Samples of fabric were irradiated in the Harwell pile and were then examined for half-life radiation properties. The investigation showed that in addition to the presence of sodium from the sodium oleate in the soap, there was also a considerable amount of calcium. There was good correlation between the calcium content and the resultant color of the cloth. The calcium was apparently deposited unevenly from the wash water. The obvious remedy—use of pre-softened water—was adopted. Since then there has been no further complaint on the grounds of uneven dyeing.

Puerto Rican Silk Mill. A silk textile manufacturing plant is to be established by Henry Godde Bevin, Inc., San Juan, Puerto Rico, at Aguadilla on the western end of the island. An 18,000-sq. ft. building is now under construction. Training of future employees is already under way in a small training shop set up for that purpose.

It's time we got *working* mad!

As we listen to the latest insults from Moscow, we're likely to get fighting mad.

Instead, we'd better use our heads and get *working* mad.

It is clear by now that Stalin and his gang respect just one thing—strength. Behind the Iron Curtain they've been building a huge fighting machine while we were reducing ours. Now we must rebuild our defenses—*fast.*

As things stand today, there is just *one* way to prevent World War III. That is to re-arm—to become strong—and to stay that way!

This calls for better productivity all along the line. Not just in making guns, tanks and planes, but in turning out civilian goods, too.

Arms must come first. But we must produce arms *at the same time* we produce civilian goods.

We can do this double job if we all work together to turn out more for every hour we work—if we use our ingenuity to step up productivity.

All of us must now make sacrifices for the common good. But we're working for the biggest reward of all —*peace with freedom!*

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NEWS ABOUT *Suppliers*

Equipment Suppliers

Acme Steel Co., Chicago, Ill., has created an Atlanta sales district covering Florida, Georgia, Alabama, and Tennessee. Clarence A. Carrell is district manager. William G. Polley is the area special representative. G. R. Easley is district manager of the Virginia-Carolinas territory, with headquarters in Greenville, S. C. Vincent F. Murphy is now New England district manager, succeeding William E. Close, new Eastern-area national-account supervisor.

Atkinson Haserick & Co., Boston, Mass., has appointed Percy Ellis, former vice president and treasurer of Sykes, Inc., Boston, to a position in cotton-machinery sales.

Atlantic Steel Co., Atlanta, Ga., recently named Paul A. Duke product engineer for the firm. He had been Atlanta representative for the warehouse division since 1948.

Dixon Lubricating Saddle Co., Bristol, R. I., is celebrating this year its 75th anniversary as a supplier of lubricating saddles, adjustable levers, lever screws, and locking stirrups to the textile industry.

Draper Corp., Hopedale, Mass., is increasing the capacity of its East Spartanburg, S. C., plant. Completion of the program will more than double production capacity. More than $1,500,000 will then have been invested in the Spartanburg operation. Only repair parts and equipment for Southern mills will be manufactured. At Hopedale, the company will in June begin limited delivery of internal grinders to Bryant Chucking Grinder Co., Springfield, Vt., as part of the mobilization effort.

JAMES McDOWELL has been appointed to the newly created position of Southern sales director of Hemphill Co., Pawtucket, R. I. He is now in charge of sales throughout the entire South.

PAUL M. ARNALL was recently elected president of The Lunkenheimer Co., Cincinnati, Ohio, succeeding Frank P. Rhame, resigned. Mr. Arnall had been first vice president and general manager.

General Electric Co., Schenectady, N. Y., has named Francis J. Boucher to the position of manager of manufacturing of the small- and medium-motor division. He had been staff assistant to the manager of manufacturing of the small-apparatus divisions.

Graton & Knight Co., Worcester, Mass., is celebrating this year its 100 years of service to American industry, including textiles. The company is now said to be the world's largest producer of industrial leathers.

Holdsworth Gill Screw Co., Inc., Pawtucket, R. I., has opened a new and enlarged plant at Pawtucket to assure

Smooth

HEIM *"Unibal"*
SWEEPSTICK

For Really Smooth Pick Action

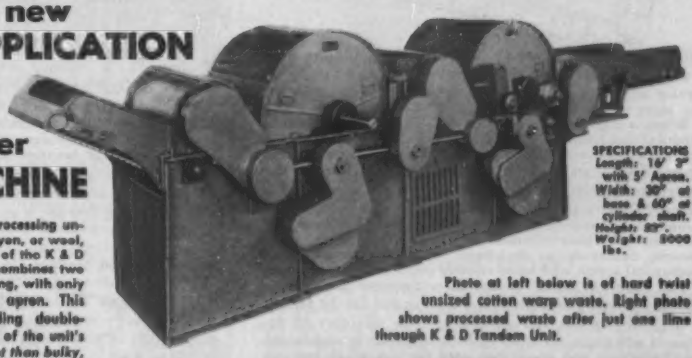
The **HEIM** "Unibal" sweepstick has a self-aligning Spherical Bearing rigidly pressed into a body of resilient, shock absorbing, rubber-bonded fabric. The **HEIM** Spherical Bearing used in its construction consists of a single steel ball, through which the stud passes, rotating in bronze bearing inserts. Slack in the pick motion becomes a thing of the past, and a much longer period of service is obtained. Write now for descriptive circular and prices.

THE HEIM COMPANY
FAIRFIELD, CONNECTICUT

YOU CAN NOW WHIP THE "HARD WASTE" PROBLEM

with this new

TANDEM APPLICATION of the K & D Single Cylinder WASTE MACHINE

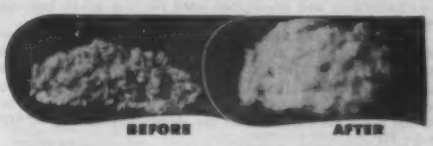


SPECIFICATIONS
Length: 14' 9" with 5' Apron. Width: 30" at base & 60" at cylinder shaft. Height: 82". Weight: 5000 lbs.

Designed to meet the need for processing unsized "Hard Waste" in cotton, rayon, or wool, this new TANDEM APPLICATION of the K & D Single Cylinder Waste Machine combines two single-cylinder units in one housing, with only one feed apron and one exit apron. This TANDEM APPLICATION, providing double-action waste processing on each of the unit's two cylinders, is far more efficient than bulky, conventional machines with four cylinders.

Photo at left below is of hard twist unsized cotton warp waste. Right photo shows processed waste after just one time through K & D Tandem Unit.

The mill* which sent the "Hard Waste" sample shown at right ordered one K & D TANDEM UNIT immediately after we ran their samples. They were so pleased with their installation that they have already ordered additional units! (*Name of Mill on request.)



BEFORE **AFTER**

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MACHINE SHOP AND FOUNDRY
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Guarantee

Before you can guarantee a product, you have to know how it will react to conditions it is expected to meet during its service life. Moreover, when you want this information, you want it fast!

When it comes to washable fabrics (or any other washable product) the Launder-Ometer is the machine that can give you the facts—in a fraction of the time normally required. Accepted as the standard laboratory washing machine of the American Association of Textile Chemists and Colorists, the Launder-Ometer can duplicate the effects of as many as 5 commercial launderings in one forty-five minute test. The data thus provided includes loss of tensile strength, color fastness, resistance to shrinkage, bleeding, washing and mechanical action, and other equally important information.

The Launder-Ometer is also in widespread use for the laboratory dyeing of leathers and textiles and for the testing of dry-cleaning oils and solvents and the efficiency of detergents and soaps. As many as 20 samples can be conducted simultaneously and conditions used for any given test can be reproduced at any time.

Operation of the Launder-Ometer is simple. It is a carefully built machine, soundly constructed, and economical in maintenance and operating costs. Available in 3 sizes with capacities of 20 one pint jars, 20 one quart jars, or 6 two quart jars plus any combination of 10 one pint jars or 10 one quart jars. All models are electrically driven, ¼ HP to ½ HP.

New Inconel jars designed in accordance with A.A.T.C.C. specifications for the new Accelerated Wash Fastness Test No. 3A are now available from Atlas.

ATLAS ELECTRIC DEVICES COMPANY

361 West Superior St., Chicago 10, Ill.

Manufacturers of accelerated testing devices for more than a quarter of a century

WEATHER-OMETERS • FADE-OMETERS • LAUNDER-OMETERS

260 For more information, write direct or use Reader Service post card.

News About SUPPLIERS (Continued)

NEW BRANCH FACTORY, office, and warehouse of Methuen Card & Napper Clothing Co., Columbus, Ga., was recently opened under the managership of J. W. Davis.

faster parts service for its customers.

Pawtucket Spinning Ring Co., Pawtucket, R. I., subsidiary of Saco-Lowell Shops, Boston, Mass., recently elected as president John S. Chafee, executive vice president of Saco-Lowell. He succeeds David F. Edwards, president of Saco-Lowell.

Standard Pressed Steel Co., Jenkintown, Pa., has elected H. Thomas Hallowell, Jr., its president, succeeding H. T. Hallowell, Sr., now chairman of the board. Harold P. Gade, co-founder of the firm in 1903 with Mr. Hallowell, Sr., is now senior vice president as well as treasurer. J. Whiting Friel is vice president in charge of sales. William I. Kryder is now secretary, succeeding Ralph S. Mast, retired.

Textile Machine Works, Reading, Pa., is reducing production of knitting machines because of both new defense orders and oncoming materials shortages. Defense orders so far affect only the foundry department. Knitting machines are still being assembled, and no shutdown in this line is envisaged.

Union Special Machine Co., Chicago, Ill., has appointed Joseph LaVecchia its Long Island territory representative, working out of New York. He had been a service man in the New York area. C. G. Kopplin, works manager at Chicago, was recently elected a vice president of the firm.

Warner Electric Brake & Clutch Co., Chicago, Ill., recently appointed Thomas O. McMillan its Eastern representative, with headquarters at Lebanon, Pa. He will not cover New York nor part of New Jersey.

Westinghouse Electric Corp., Pittsburgh, Pa., has named W. G. Miller manager of manufacturing for the motor and control division at Buffalo, N. Y. He had been assistant works manager. The company will open a plant for the manufacture of Micarta at Hampton, S. C., the first company divisional manufacturing plant to be established by the firm in the Southeast. Plans are in motion for two new West Pittsburgh buildings that will increase by 65%, capacity to produce giant electric generators.

Worthington Pump & Machinery Corp., Harrison, N. J., has acquired the land, buildings, and equipment of National Transit Pump & Machine Co., Oil City, Pa., for the furtherance of production of equipment for the national-defense program. W. A. Finn has been named company general European manager, to be located in Paris, France, succeeding A. W. Fraser. Worthington-Gamon Meter Co., Newark, N. J., formerly a subsidiary of Worthington Pump, has been made a division of the corporation.

Chemical and Yarn Suppliers

American Cyanamid Co., New York, has appointed Bernard W. Crowe to the textile-fiber research group at the Stamford, Conn., research laboratories. The Calco Chemical Div., at Bound Brook, N. J., has made known that Richard L. Newman, formerly with Pabco Products, Inc., is now a member of the technical field-service division, pigment department. R. N. Griswold, former Cincinnati branch manager, is now Mid-Central regional-sales manager.

FRIEND OF THE PLANT OWNER... WHO HAS A WET SURFACE MAINTENANCE PROBLEM

The Damp-Tex system of painting kills rust, rot, fungus and bacteria. Stops deterioration. Can be applied on any paintable surface, *wet* or dry, with equal ease and efficiency... changing dingy, rough light-blotter interiors into glistening porcelain-like beauty. One coat covers. Resists acid, alkali, corrosive gases and oxidation. Dries overnight without flavor-tainting odor into waterproof film. Comes in white and colors.

Write for our trial offer AA.

LIQUID PORCELAIN-LIKE

DAMP-TEX FOR WET OR DRY SURFACES

STEELCOTE MFG. CO. • ST. LOUIS, MO.

Canadian Manufacturer—Standard Paint & Varnish Co., Windsor, Canada

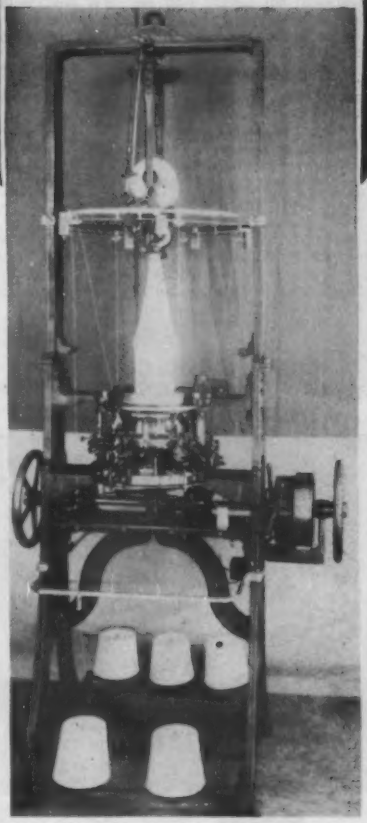
WESCO STOPMOTIONS

FOR

OUTERWEAR • UNDERWEAR • HOSIERY

STANDARD EQUIPMENT

COOPER KNITTING MACHINES



KNOW HOW *and* HOW!

Established in 1859, the Charles Cooper Company know how to build Rib Knitting Machines. So with WESCO stop-motions, experience has been a great teacher and throughout the world today knitters specify WESCO for best performance on the machines they buy.

LOOK FOR WESCO

on all these knitting machines:

H. Brinton Co.
Charles Cooper Co.
Crane Manufacturing Co.
Edmes Products Corp.
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Jacquard Knitting Mach. Co.
Lamb Knitting Mach. Co.
Leighton Machine Co.
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Supreme Knitting Mach. Co.
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STANDARD THE WORLD OVER

STOP-MOTION DEVICES CORP.

1471-77 Fulton St. Brooklyn 16, N. Y.

Another of a Series of Knitting Machine Builders. Others to follow.

CONSERVE YOUR QUILLS!

Use the

NASH "79" QUILL POLISHER

to relacquer worn quills

You need not discard your old loom bobbins because they are worn or have slight surface imperfections. They can be sanded smooth, and re-coated with finishing material.

If your quills are in good condition, the conventional way of using the Nash No. 79 with steel wool pads, special polish and burnishing pads will produce a perfect surface finish, preventing filament breakage or transfer of dirt to the yarn.

Failure of the finish coat calls for a complete refinishing operation on the body of the quill, and the Nash relacquering attachment was developed to meet this need.

Lacquers 30 to 35 Quills Per Minute

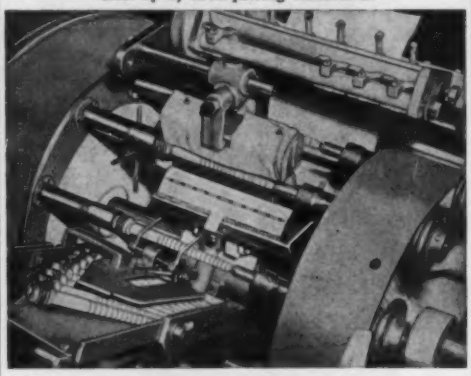
With the relacquering attachment just developed for use with the Nash No. 79 Quill Polisher, you can apply a new coat of Lacquer or else a shellac and oil finish—automatically at 30 to 35 bobbins per minute. The attachment is easily attached or removed.

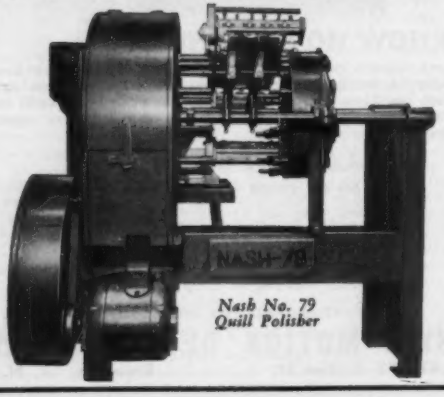
Write for descriptive material on the Nash No. 79 Automatic Quill Polisher and Relacquering attachment.

J. M. NASH COMPANY

2364 N. 30th Street Milwaukee 10, Wisconsin

Close-up of Relacquering Attachment





Nash No. 79 Quill Polisher

NEWS ABOUT SUPPLIERS (Continued)

RAYMOND C. GAUGLER was recently elected president of American Cyanamid Co., New York, succeeding the late William B. Bell, who died suddenly at Marrakech, Morocco. Mr. Gaugler had been executive vice president since 1947.

MARK M. BIDDISON has been made executive vice president of General Chemical Div., Allied Chemical & Dye Corp., New York. A member of the firm for 33 years, he served as vice president for four years before being elected to his new position.

Carbide & Carbon Chemicals Div., Union Carbide & Carbon Corp., New York, has established a Participating Fellowship at Textile Research Institute, Princeton, N. J. The subject of the research will be a study of the basic triboelectric properties of textile fibers as they relate to static-electricity generation in processing and service. William P. Rieman is undertaking the work of the Fellowship.

Celanese Corp. of America, New York, has named J. Guyton Boston sales manager of acetate-filament yarn. Formerly assistant to Harry Price, vice president, Mr. Boston is now responsible to W. L. O'Donovan, manager of the filament-yarn division.

Ciba Co., Inc., New York, recently appointed F. F. Jacobs director of research and development, with headquarters in New York. He was formerly technical director of Aspinook Corp., and before that was with General Dyestuff Corp.

Colgate-Palmolive-Peet Co., Jersey City, N. J., has promoted J. M. Nykiel to sales manager of the industrial department at Jersey City. W. E. Humphreys succeeds him as divisional manager at the Chicago, Ill., industrial office.

Colloids, Inc., Newark, N. J., has created the post of manager of the Newark division and has named to the position Howard L. Smith, resident manager for the past four years of the firm's Canadian subsidiary. Continuing to service their Eastern areas are Jack Ferguson in dyeing and finishing; Philip Schwartz in synthetics weaving and throwing; and Frank H. Gleason in synthetics, paper, and worsted mills. Herman C. Selya, New England representative for seven years, is now manager of the newly created New England division. William F. Mann, Jr., continues as resident manager of Colloids of Carolina, Inc., High Point, N. C.

Dexter Chemical Corp., New York, recently appointed Adrian S. Price advertising and public-relations director. He was formerly assistant advertising-sales-promotion manager for Burndy Engineering Co.

E. F. Drew & Co., Inc., New York, has named J. P. Redston sales manager of the textile-chemicals department. Mr. Redston was formerly sales manager, specialty-oils division, E. F. Drew & Co., Ltd., Toronto, Ont. He will supervise the sales and service activities of the firm's entire line of textile products.

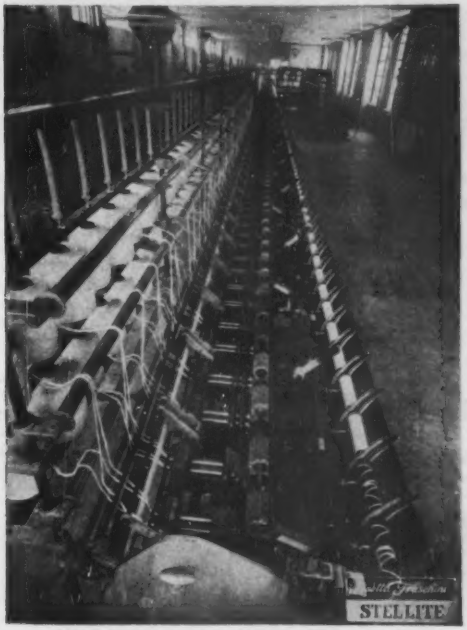
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has named Wanton E. Gladding, personnel manager of the company's nylon division for the last two years, manager of the new Fiber-V plant which is being built at Kinston, N. C. William T. Wood, director of production of the nylon di-

TEXTILE MACHINES S. P. A..

Isotta Fraschini

ANNOUNCE THEIR NEW SUPERDRAFT FOR PORCUPINE DRAWING FRAMES

(Patent Stellite-Pasta pend.)



1. **DRAFT INCREASE** from 4-4½ average to 7-8 (in special cases up to 10).
2. **HIGHER PROCESSING SPEEDS** from 26½ yards per minute to 30½ yards.
3. **REDUCTION** of sliver breakage and waste.
4. **IMPROVEMENT** in sliver quality and quantity. The roving can be better processed on ring spinning frame.
5. **ELIMINATION** of drawing operations.
6. **LOW COST.** Pays for itself in a short time.

Available either with NEW Isotta Fraschini Porcupine frames or as individual unit for any other make.

Write today for complete information to

STELLITE AMERICAN CORP.

Sales Representatives of Stellite Soc. in Acc. Sempl. Milan, Italy

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Pick INSTANTANEOUS WATER HEATERS PROVIDE

HOT WATER INSTANTLY

. . . AT THE TEMPERATURE REQUIRED

. . . IN THE VOLUME NEEDED

ENGINEERED

FOR ALL INDUSTRIAL NEEDS

★ PRODUCTION ★ PROCESSING ★ MAINTENANCE

A steam injection heater; PICK has the exclusive **Pressurizer Piston** that stabilizes injection pressure — eliminates pipe hammering and shaking. Fully automatic to provide and accurately maintain temperatures 40° to 180° F. Available in seven sizes with rated capacities of 10 to 200 gallons per minute. Any volume required can be obtained by using multiple installation. Compact design — saves space and installation cost.

★ ***STEEL MILLS***
ANNEALING
ELECTROLYTIC PLATING

★ ***TEXTILES***
BLEACHING
DYEING

★ ***FOOD PROCESSING, DAIRIES, PACKING PLANTS***
WASHUP (TO MEET INSPECTION REQUIREMENTS)

Write for Engineering Details and Specifications

MANUFACTURED BY

PICK MANUFACTURING CO.

WEST BEND, WISCONSIN, U.S.A.

how to get a softer "hand" and a whiter "bottom"...

...THE *Versenes

VERSENES* VS CONTAMINATION

A softer "hand" and a whiter "bottom" can come only from cleaner fibres. This means that regardless of the textile itself or the wet process involved, fibre surfaces must be free from chemical contaminants and impurities — including insoluble soap deposits. Through the new chemistry of chelation, Versene permits you to achieve these highly desirable objectives.

VALUE OF VERSENES*

As powerful organic complexing agents the Versenes give you exacting chemical control over cations in solution. Thus do they prevent contamination and assure cleaner fibres. The Versenes are chemically known as the sodium salts of ethylene diamine tetra acetic and other polyamino acids. Available in liquid or powder form, they are completely stable at high temperature and at all pH's.

VARIOUS VERSENES*

Versene (regular), the original *Versene*, is a most efficient general complexing agent. It softens water completely and permanently *without* precipitation. *Versene Fe 3* prevents hard water deposits and iron stains. *Versene Fe 3 Specific* is the most powerful iron complexing agent known in the normal pH range. *Versene* T prevents and removes iron deposits from fabric treated with caustic.

"INDUSTRY'S MOST MODERN CHEMICALS"

Through the new chemistry of chelation, the Versenes can definitely help you better your textile formulations and processes. Write Dept. D for your free copy of Technical Bulletin No. 2. Send for samples. *Trade Mark

BERSWORTH CHEMICAL CO.
FRAMINGHAM, MASSACHUSETTS
Warehouse Stocks
Providence Agents
George Mann, 251 Fox Point Boulevard, Providence, R.I.
West Coast Agents: Griffin Chemical Co., San Francisco, Los Angeles
Midwest Agent: Kraft Chemical Co., Inc., 917 W. 18th Street, Chicago
Southern Agent: Chas. S. Tanner Co., Liberty Life Bldg., Charlotte, N.C.
Associated Chemical Co. of Canada, 14 Darrell Ave., Toronto, Ontario

NEWS ABOUT SUPPLIERS (Continued)

JOHN N. GAMMON has become Southern district manager of Napco Chemical Co., Harrison, N. J., and Cedartown, Ga. He succeeds the late George H. Small, who died in October. Since 1946 Mr. Gammon had been district manager of the Central U. S. area.

vision for the last three years, is now assistant manager of the division, in charge of Fiber-V operations. Charles M. Switzer continues as assistant manager in charge of nylon. Leonard S. Little, manager of the textile service section, organic-chemicals department, has retired and set up offices as a consultant at 101 W. 31st St., New York.

Oscar Heineman Corp., Chicago, Ill., has named Frank Lunday to represent the firm in the Carolina area, with headquarters in Charlotte, N. C. Mr. Lunday was a representative with the acetate and rayon division of Du Pont in the area for 13 years.

Monsanto Chemical Co., St. Louis, Mo., is designing and constructing a chlorine-caustic plant near Muscle Shoals, Ala., to employ about 80 people. Production will go to Armed-Forces needs.

Owens-Corning Fiberglas Corp., Toledo, Ohio, is beginning excavation work and site grading for a new 175,000-sq. ft. Fiberglas yarn-manufacturing plant in Anderson, S. C. Production will begin at the middle of the year, with an initial working force of about 200.

Wyandotte Chemicals Corp., Wyandotte, Mich., has appointed Walter L. Rippeteau manager of the organic-chemical sales department of the Michigan Alkali Div. He had been manager of the market-development department since 1949.

Other Services

National Production Authority, Washington, D. C., recently named Marshall Newell and John W. Menefee, Jr., as textile-machinery consultants. Mr. Newell has been connected with Draper Corp., Hopedale, Mass., for many years and was in charge of textile-machinery operations under the WPB in World War II. Mr. Menefee has been Washington representative of the National Assn. of Textile Machinery Manufacturers and is a former official of ECA.

Robert & Co. Associates, Atlanta, Ga., has appointed Eugene C. Gwaltney, Jr., to a position as a textile engineer. He was formerly with Arlind Corp., New York; Saco-Lowell Shops, Boston, Mass.; Burlington Mills; and Bibb Mfg. Co.

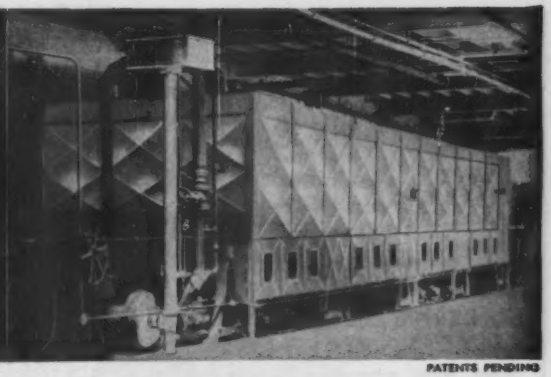
United States Testing Co., Inc., Hoboken, N. J., has established a new cotton-fiber testing laboratory in the Cotton Exchange Building in Dallas, Texas. Samuel C. Mayne, Jr., is manager. The Hoboken laboratory has offered its services to mills interested in specifications and contracts for the manufacture of fabrics required for defense. Gordon R. Turner is in charge.

P. L. Davidson, consulting engineer, has closed offices at Greenville, S. C., and opened a consolidated Southern engineering office at Greensboro, N. C. An office is still to be maintained at Philadelphia, Pa.

New England Textile Foundation, Providence, R. I., has granted the following additional supplements to four New England textile schools: for Bradford Durfee—$2,000 for augmentation of faculty salaries and $6,500 for the purchase of new equipment; for Lowell Textile Institute—$12,000 for augmentation of faculty salaries and $27,000 for the purchase of new equipment; for New Bedford Textile Institute—$5,500 for the purchase of new equipment; and for R. I. School of Design—$14,000 for augmentation of faculty salaries and $10,000 for purchase of new equipment.

Another "first"!

CARBOMATIC "UNA-RAY" OVEN



PATENTS PENDING

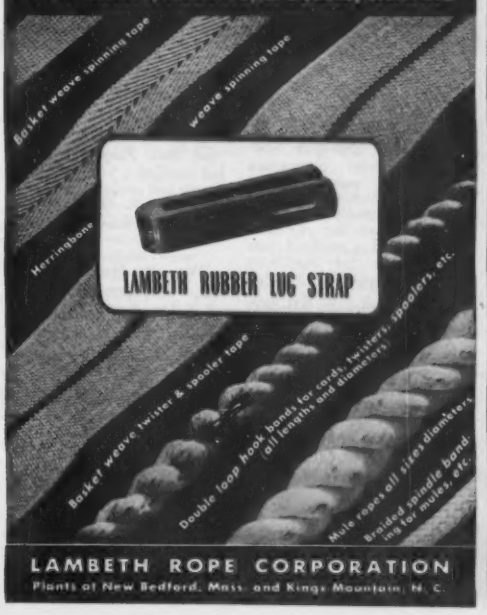
COMBINES the advantages of 3 types of oven-heating:
(1) INFRA-RED RADIATION (2) CONVECTED HEAT (3) HEATED AIR—with added turbulence

Greatly increased efficiency! For example: *40* linear feet of "Una-Ray" Oven equal the productive capacity of *70* feet of a conventional oven-type. Saves thousands of dollars in equipment cost and operational economies. No burning, scorching, spotting or marking of goods. No crocking. No "gas fading" or color migration. Uniform color is insured. A general-purpose oven (of any capacity needed) that provides accurately-controlled working temperatures up to 550°F. For drying; drying and curing in one operation; resin fusing; Nylon setting, etc. *Write for Bulletin TW-3*

CARBOMATIC CORPORATION • **Pioneers in Textile Infra-Red**
24-81 47th Street **Long Island City 3, N. Y.**

Southern Branch: Textile Specialty Co., Greensboro, N. C. *New England Representative:* H. E. Linderson, 35 Westminster St., Providence, R. I.

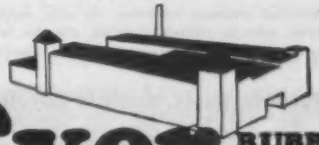
LAMBETH PRODUCTS
FOR SPINNING, TWISTING, SPOOLING, WEAVING


Basket weave spinning tape
weave spinning tape
Herringbone
LAMBETH RUBBER LUG STRAP
Basket weave, twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes all sizes diameters
Braided spindle Bands for mules, etc.

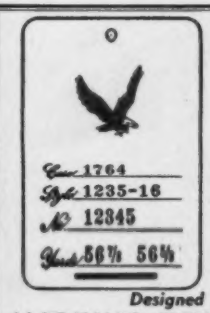
LAMBETH ROPE CORPORATION
Plants at New Bedford, Mass. and Kings Mountain, N. C.

TYER
Rubber Covered
ROLLS
For TEXTILE Mills

Compounded of natural or synthetic rubbers to meet specific requirements.



Tyer RUBBER COMPANY
ANDOVER, MASSACHUSETTS



The New AMERICAN SPEED SET GEAR CONSTRUCTION NUMBERING MACHINES

Designed Especially For

MARKING TEXTILE MILL TAGS TICKETS, LABELS, Etc.

Modern textile merchandising demands CLEAR, EASILY READ piece, lot and case numbers, size and yardage lengths, etc. Supply this demand and use the new American Speed Set Gear Construction Numbering Machines. Such numbering with Speed Set machines can be done quickly and easily. Numbers change instantly with touch of fingers and ANY COMBINATION OF NUMBERS can be quickly obtained. All steel wheels, deeply engraved figures, self inking.

Eliminate errors and see that your tags, tickets, labels, etc., are attractively and legibly numbered the SPEED SET way. WRITE TODAY FOR FOLDER describing these new machines used in Cotton, Woolen, Hosiery, Knit Goods, and Dyeing and Finishing plants.

American Numbering Machine Co.
ATLANTIC & SHEPHERD AVES BROOKLYN N Y

COLOR MATCHING
with
PHOTOVOLT Photoelectric
REFLECTION METER

A truly practical precision instrument for color matching and for specifying color by tristimulus values, also for fading and detergency tests . . . for production, control and laboratory work.

Portable, sturdy, simple to operate

Write for Bulletin #605 to

PHOTOVOLT CORP.

95 MADISON AVENUE NEW YORK 16, N. Y.
Also: Colorimeters, Fluorescence Meters, pH Meters

NEWS ABOUT Mills

Cotton Mills

American Textile Co., Pawtucket, R. I., has awarded contract to George J. LaChappelle, Pawtucket, for one-story addition, 95x100 ft. Cost is over $75,000.

American Yarn & Processing Co., Mt. Holly, N. C., has acquired a building from Whitehall Knitting Mills, Inc.

Barnhart Mfg. Co., Charlotte, N. C. is constructing $105,000 addition. Building will be two stories, brick and steel construction with concrete floors. Additional space will be used for expanded manufacturing facilities.

Berkeley Mills, Inc., Balfour, N. C., cotton gauze manufacturer, will install additional equipment in one-story addition to mill, for which plans were recently completed.

Bonham Cotton Mills, Bonham, Tex., has increased its capital stock from $400,000 to $600,000.

California Cotton Mills Div., National Automotive Fibres, Inc., Salem, Ore., will make an expenditure of approximately $300,000 for expansion and improvement of manufacturing facilities. Expansion includes a new open-span building now under construction which, when completed, will double manufacturing floor space and employment. In addition, company has purchased and installed a unit of new English-made flax machinery specially designed to manufacture fine yarns from flax tow.

Chiquola Mfg. Co., Honea Path, S. C., is building a two-story 50x100-ft. addition which will add 17,560 sq. ft. of floor space. New structure will accommodate 100 more looms.

Columbus Mfg. Co., Columbus, Ga., plans a two-story addition for expansion of cloth room.

Cone Mills Corp., Greensboro, N. C., has let contracts for construction of a $200,000 two-story brick building on Maple St. to house its laboratory, printing, and sample departments. Company also expects to spend between $350,000 and $400,000 during 1951 on modernization of its mill village. Work is now going forward on construction of two one-story extensions to be used as warehouses at company Edna Mill, Reidsville, N. C.

Dixie Mercerizing Co., Chattanooga, Tenn., has let contract to Collins & Hobbs, Chattanooga, for addition to local Ridgedale Mill, to be used for office service. Robert & Co. Associates, Atlanta, Ga., is architect.

Dwight Mfg. Co., Alabama City, Ala., is to be merged with Cone Mills Corp., according to plans approved by directors of both concerns. Dwight produces cotton gray goods and has 86,000 spindles and 2,340 looms. Company is constructing a mill addition which will probably be in operation by next August, when approximately 300 more operatives will be employed.

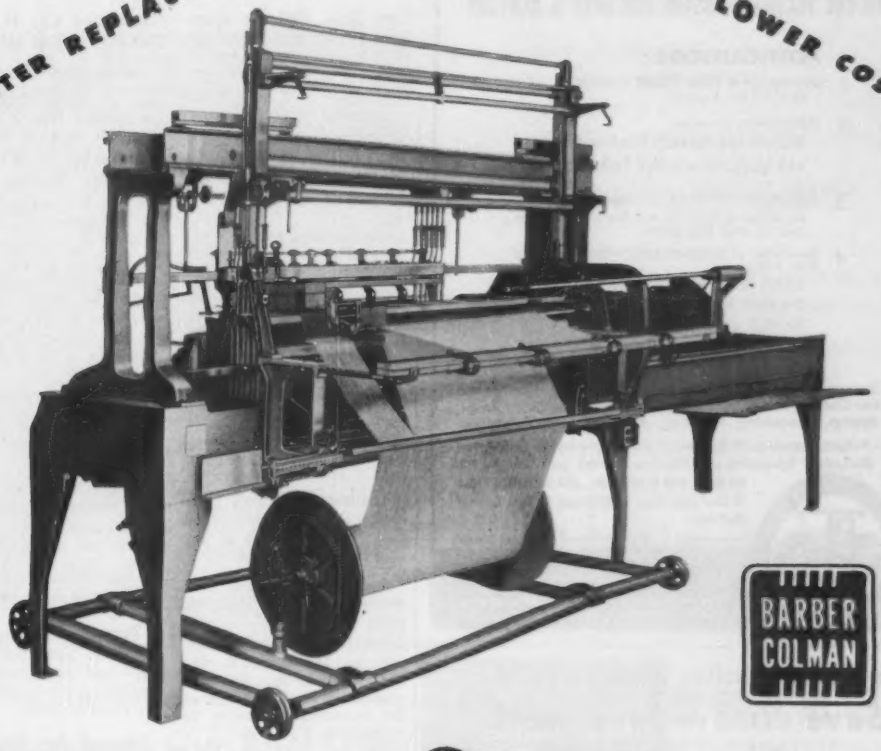
Franklin Process Spinning Mill, Inc., Fingerville, S. C., has installed a $100,000 water-supply and sewage system at its plant. G. E. Moore & Co., Greenwood, S. C., was contractor.

Wm. E. Hooper & Sons Co., Woodberry, Md., has asked bids for new one-story addition to be used for office service. McPherson Co., Greenville, S. C., is architect.

International Braid Co., Inc., Fall River, Mass., has purchased the former Barnard Mill property from Ansonia Mills, Inc., Ansonia, Conn. Operations will be resumed soon.

Lancaster Looms, Inc. plant at Boiling Springs, N. C., has been purchased by J. Frank Love and associates of Shelby, and will be known as Marion

FASTER REPLACEMENT • STRAIGHTER WARPS • LOWER COSTS



BARBER COLMAN

BARBER-COLMAN MODEL D *Warp Drawing Machine*

The Model "D" Barber-Colman Warp Drawing Machine is especially suited for wide sheeting mills or other mills that rarely use more than six harnesses and not more than four banks of drop wires, and that have a high percentage of drawing-in due to changes in width and quality of material.

HARNESS FRAME LENGTHS	
Size of Machine	Maximum Overall Length of Harness
48	54"
66	72"
86	92"

Field reports show up to 4600 Ends per Hour
Will draw warp from 10 to 300 ends per inch
Will draw from either flat sheet or 1 x 1 lease
Will draw from single or double beam or split sheet
Will draw 1 x 1 lease in Double Beam or Split Sheet

Draws ends through drop wires, heddles and reed all in one operation. This machine will draw practically any type of draft, either complicated or simple, with the same speed and accuracy.

MACHINE CAPACITY: Reed, 6 Harness, 4 Banks of Drop Wires
DROP WIRE CAPACITY: 9/32" through 3/4" wide

WILL DRAW

- Cotton Yarns
- Filament Yarns
- Spun Yarns
- Woolens and Worsteds
- Monofilaments

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND MUNICH, GERMANY

BARNES SERVICE *Consulting Engineers*
TO THE TEXTILE INDUSTRY FOR OVER ¾ CENTURY

Announces:

1. Opening of a NEW YORK OFFICE at 522 Fifth Avenue.
2. Inauguration of a new Methods and Materials Handling Division with headquarters in New York Office.
3. Appointment of David P. Canavan in charge of Methods and Materials Handling and the New York Office.
4. Expansion of BARNES EXECUTIVE SERVICE FOR TEXTILES
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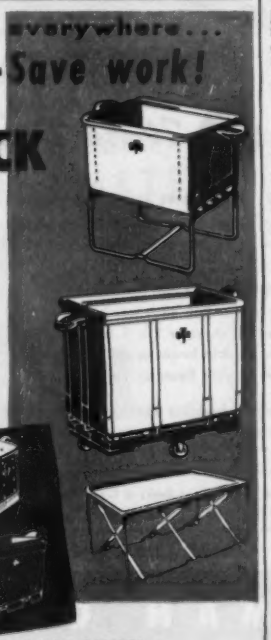

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News About MILLS (Continued)

Yarn Mills. Full-scale operations are expected to get under way soon on production of cotton yarns. Mill houses 4,400 spindles.

Magnolia Textiles, Inc., Magnolia, Miss., plans a one-story addition to mill which will cost about $65,000 without equipment.

Mayfair Mills, Arcadia, S. C., has filed a certificate with the Secretary of State of South Carolina, increasing its capital stock from $3,000,000 to $4,500,000, following action taken by mill board of directors.

Pacolet Mfg. Co. has underway an extensive expansion program at its two mills in Gainesville, Ga. Expansion will increase floor space by about 80,000 sq. ft.

Quitman Mills, Inc., Quitman, Ga., has recently installed about $400,000 worth of machinery and equipment.

Riegel Textile Corp. will move its glove manufacturing plant from Trion, Ga., to Greenville, Ala., so that Trion plant may be converted to spinning and weaving. Tentative orders have already been placed for cotton-mill machinery to equip Trion plant.

Riverdale Mills, Enoree, S. C., expects to complete its $2,000,000 expansion program soon. Addition will give mill an extra 70,000 sq. ft. of production area in addition to present building. Mill is converting from coarse goods to lighter goods.

Riverside Mills, Augusta, Ga., has under construction a two-story addition for expansion of its carpet-yarn department. Included in the expansion program is some specially designed machinery.

Spool Cotton Co., St. Louis, Mo., is proceeding with new one-story warehouse at 4935 Fryler Ave., for which contract recently was let to John Hill Construction Co., St. Louis. Cost will be about $350,000.

Springs Cotton Mills, Lancaster, S. C., has placed contracts to change 315,000 cotton spindles from a previous long-draft type to new and improved type. Contracts went to Whitin Machine Works and H & B American Machine Co. Company also plans construction of an addition to its plant at Fort Mills, S. C. Structure will be 101x269 ft., and will house approximately 400 looms. Work should be completed in about six months. Company also has construction under way at Kershaw plant, Kershaw, S. C., on an addition which will house 6,000 spindles and 100 looms. Machinery has been purchased and should be in place in a few months.

Tennessee Valley Fabrics Co., Sweetwater, Tenn., has begun operations in new plant. Cotton lace is currently being made. Nylon lace is also to be manufactured when equipment arrives from England.

Texas Textile Mills, McKinney, Tex., plant, plans extensions and improvements, including one-story addition costing about $100,000.

Wallace Mfg. Co., Jonesville, S. C., division of J. P. Stevens & Co., Inc., has changed its name to Jonesville Mills. Company manufactures carded cotton sheeting.

Wamsutta Mills, New Bedford, Mass., has installed 90 new wide looms to increase its fine-sheeting capacity.

Woonsocket Falls Co. is nearing completion of $3,500,000 plant now under construction at Wilmington, N. C. Building is 513x61 ft., one-story, and windowless. Air conditioning will be installed throughout building. About 700 people will be employed in manufacture of pile fabrics for upholstering cars and furniture.

Woolen and Worsted Mills

American Woolen Co. is considering reopening its Assabet Mills, Maynard, Mass., to increase production in national emergency. Company is reopening Kennebec Mills, Fairfield, Me., and 300 needed employees have been sent for.

Armprior Woolen Mills, Armprior, Ont., which has been idle for some time, has resumed operations under new name of Valley Textiles Ltd.

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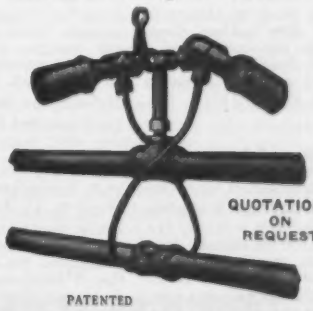

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News About Mills (Continued)

Machinery has been overhauled and new machines installed.

Belleville Woolen Co., North Kingston, R. I., has been reopened. Sale of mill, which has been closed for more than a year, by T. Morton Curry to Max H. Furman of Bridgeton, Me., was recently completed. Mr. Furman will operate mill under firm name of Allentown Mills, Inc., and will employ about 150 persons in manufacturing low-cost woolens for linings.

Collie Woolen Mills Ltd., Appleton, Ont., has begun work on one-story, 600x40-ft. extension to house dyeing and finishing machinery and departments formerly located in old Tesky mill of firm destroyed by fire in July, 1950. Existing machinery in main plant will be rearranged and new machinery and equipment will be installed. A new office building will also be erected.

James Lees & Sons Co., Bridgeport, Pa., is constructing a $700,000 office building. Structure will be two-stories of brick and steel construction and include year-around air-conditioning facilities. United Engineers & Constructors, Philadelphia, is engineer. Company has awarded contract for construction of two additions to its manufacturing plant at Castor Ave. and Butler St., Philadelphia, Pa., to Rank R. Heavner, Norristown, Pa.

McCormick Spinning Mill, McCormick, S. C., will construct an 87,000-sq.ft. addition to present building. Daniel Construction Co., Greenville, is in charge of work. Completion is expected by July.

Ramseur Worsted Mills, Inc., Ramseur, N. C., a subsidiary of Guerin Mills, Inc., Woonsocket, R. I., has completed an addition which doubles its facilities. Windowless building is of brick and steel construction.

Alexander Smith & Sons Carpet Co. plans to erect large office building at White Plains, N. Y., for which site recently was acquired. Kimball & Husted, New York, N. Y., is architect.

Wool Combing Corp. of Canada Ltd., Acton, Ont., has established new wool combing plant at Galt, Ont., and is now installing machinery. Nylon department of firm is being removed from Acton to Galt, where combing department for rayon and other fibers will be established. Special machines may be added for treatment of nylon and other synthetic wastes.

Synthetics Mills

Burlington Mills Corp., Greensboro, N. C., has begun construction of a two-story addition to executive offices at 301 N. Eugene St. Cost of project is about $150,000. New building will be an addition to present office building. Company has also been issued a $45,000 building permit to construct a brick addition to Bur-Mil plant at 1419 S. Elm St.

Canadian Industries Ltd., Kingston, Ont., is progressing with expansion of its nylon plant in that city. Production of filament yarn is nearing rate of 3,500,000 lbs. annually. New plant, to manufacture nylon salt from imported chemical intermediates, will be completed in May. Construction is now under way on a three-story building adjoining present salt-storage building to house salt-preparation equipment.

Clarkesville Mill, Clarkesville, Ga., has begun construction of new rayon weaving mill, to cost about $500,000, for which general contract recently was let to A. K. Adams Co., Inc., Atlanta, Ga. Robert & Co. Associates, Atlanta, is architect and engineer. Company was organized recently as an interest of United Merchants & Manufacturers, Inc., with headquarters in New York.

Duplan Corp., New York, is expanding production facilities at its Forsyth plant, Winston-Salem, N. C. Expansion will double plant's present capacity for rayon and increase its nylon production. No building addition is anticipated, but additional machinery will be installed.

E. I. du Pont de Nemours & Co., Inc., expects to begin construction of its new No. 1 Fiber V plant at Graingers,

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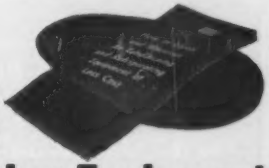

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News About Mills

N. C., in the near future.

Frank Ix & Sons Carolina Corp., Cornelius, N. C., has changed corporate name to Frank Ix & Sons Sheraton Mills Corp. Company has purchased a 13-acre tract of land near Burlington, N. C., for construction of a $1,000,000 textile weaving plant. At Lexington, N. C., company is nearing completion of a large addition started last year.

Owens-Corning Fiberglas Co., Toledo, Ohio, has let contract to Daniel Construction Co., Greenville, S. C., for new mill at Anderson, S. C., where tract of 125 acres was acquired recently. Lockwood Greene Engineers, Inc., Spartanburg, S. C., architect and engineer, prepared plans.

Rayflex Mfg. Co., Red Hill, Pa., is building an $89,000 addition to its textile plant. It will be of brick and steel, one-story and basement covering an area 115x85 ft. Charles Talley, Telford, Pa., is architect. Stierly & Forster, Mont Clare, Pa., is general contractor.

Schwarzenbach-Huber Corp., New York, reports that fourth addition to mill at Luray, Va., is under construction. Addition will contain 7,600 sq. ft. of floor space and will provide employment for 50 to 75 additional persons.

Stark Bros. Ribbon Corp. of Canada, Ltd., is now known as Burlington Mills Ribbon Corp. of Canada, Ltd., with mill at Granby, Que. Sales offices are maintained at 455 Craig St. W., Montreal, and 410 Bloor St. E., Toronto.

Textron, Inc., Providence, R. I., plans purchase of machinery and equipment which will add 1,000,000 yd. per week to its productive capacity.

Knitting Mills

Bernhard Altmann Texas Corp., San Antonio, Tex., has new plant in production. Firm manufactures men's argyle socks and men's and women's cashmere sweaters. Plant, estimated to cost $200,000, contains 25,000 sq. ft. of floor space.

Berkshire Knitting Mills, Reading, Pa., has a $10,000,000 modernization program under way. Changes include installation of a large number of new single-unit full-fashioned hosiery-knitting machines, and the replacement of other equipment throughout various buildings in Wyomissing plant. Foremost in modernization program is the installation of new Reading 30-section, 60-gage full-fashioned hosiery-knitting machines for production of complete stockings.

Bergman Knitting Mills, Philadelphia, Pa., has moved its entire knitting department into a separate building four blocks from company's present location. To make room for overcrowded departments, company has leased 12,000 sq. ft. of floor space at 21st and Clearfield Sts.

Burlington Mills Corp., Greensboro, N. C., will soon add 60-gage full-fashioned hosiery machines at its Canadian plant. Present equipment in its wholly-owned subsidiary, Burlington Mills Hosiery Co. of Canada, Ltd., in New Lachine, Que., is 45-gage and 51-gage and 400-needle circular. Expansion is expected to be completed this year. Company also plans $1,000,000 expansion of its Wadesboro, N. C., plant which will more than double size. Completion is scheduled for end of 1951.

Carolina Mills, Inc., Maiden, N. C., expects to begin work soon on new weaving and spinning building at High Shoals, N. C. McPherson Co., Greenville, S. C., is architect.

Carter Fabrics Div., J. P. Stevens & Co., Inc., South Boston, Va., will soon double present number of tricot knitting machines. Plant now has 12 Whitin high-speed warp knitting machines, Models B-2, C, and C-2, on 168-in. rayon fabric, and one on 64-in.

Fairview Knitting Mills, division of Julius Kayser Co., will construct a new hosiery mill at Belton, S. C. New plant will have 50,000 sq. ft. of space and employ about 300 people, with capacity production of 1,250 dozen pairs daily. Daniel Construction Co., Greenville, is contractor. The $1,500,000

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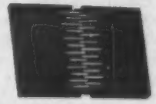

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News About MILLS (Continued)

plant is scheduled to be ready by June.

Flair Hosiery Mills, Inc., High Point, N. C., has changed name to Acclaim Hosiery Mills, Inc.

Lee Hosiery Mill, Hillsville, Va., has begun construction of a 70x90 ft. cinder-block plant. Production of women's full-fashioned nylon hosiery is expected to get underway by April.

Mar-Clay, Inc., Philadelphia, Pa., has announced plans for an expansion program for coming year at its Bridgeton, N. J., mill. Firm has placed order for six new 32-section Lieberknecht full-fashioned hosiery machines, four of which will be 51-gage and two of which will be 60-gage. In addition, company plans to build a new wing on plant to house a complete finishing department.

No-Mend Hosiery Co., Inc., Philadelphia, Pa., is constructing a $500,000 branch plant at Gainesville, Fla.

Quitman Hosiery Mill, Quitman, Ga., producer of nylon hose, will add 18 new machines and increase number of operatives from 72 to 100. The Byran interests, of Chattanooga, Tenn., have requested estimates on cost and feasibility of increasing Quitman mill in time to 200 machines and later possibly to 300 machines.

Robbins Mills, Inc., Robbins, N. C., will soon begin production of tricot fabrics on a limited scale. Mill is primarily a rayon weaving mill.

Rocky Mountain Textile Mills, Inc., Denver, Colo., is planning to enlarge its hosiery knitting department. Twelve new Scott & William Komet links-and-links machines for making men's hosiery are being installed.

Thompson Hosiery Mills, Inc., Durham, N. C., is progressing rapidly with construction of new plant. Installation of 60-gage full-fashioned machines is expected to begin soon. When operations begin, four machines will be in place, with additional equipment to be added as rapidly as possible. Building will be of brick construction, and air conditioning will be installed. George DuBose Construction Co., Kinston, N. C., is in charge of construction.

Ware Knitters, Inc., Ware, Mass., has acquired mill property in Gilbertville, Mass., for purpose of transferring the screen-printing process from its Ware plant to make room for expansion there. New printing plant will be known as Gilbertville Mills. Building will provide approximately 100,000 sq. ft. of floor space.

Dyeing and Finishing Plants

Burlington Mills Corp., Greensboro, N. C., has announced establishment of piece goods and hosiery dyeing and finishing plant in Los Angeles, Calif. Mill and facilities were purchased from Arthur Bone, Inc., rayon piece goods dyeing and finishing firm.

Cascade Finishing Co., Oriskany Falls, N. Y., has purchased Oriskany Falls plant of Utica Knitting Co., with a total floor space of 69,000 sq. ft. and will in time move its equipment now in New Hartford, N. Y. to this plant. Cascade Finishing Co. is a subsidiary of Lily White Sales Corp.

Cranston Print Works, Cranston, R. I., has let contract for $2,000,000 plant to be located outside of Hendersonville, N. C. Nylon and Orlon thread will be processed.

Crompton-Shenandoah Co., Waynesboro, Va., is having plans prepared by Jesse M. Shelton, architect, of the office of Robert & Co. Associates, Atlanta, Ga., for proposed new bleaching, dyeing, and finishing mill at Osceola, Ark., estimated to cost about $2,000,000.

Martin Corp., Bridgeton, N. J., is ready to begin operations again after rebuilding plant destroyed by fire in November, 1949. New building is completely fireproof and contains about 36,000 sq. ft. There is separate powerhouse with 425 hp. vertical boiler. New up-to-date machinery has been installed which is expected to provide capacity for 1,000,000 yd. per month.

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NEWS ABOUT Men

Julius W. Abernethy has been elected executive vice president of Mooresville Mills, Mooresville, N. C., a new position, and **Gordon G. Matheson** has been elected a vice president. **Leighton T. Horton** has been made an assistant secretary.

James R. R. Bayne, formerly vice president and managing director of Jantzen Knitting Mills of Canada Ltd., Vancouver, B. C., is now president of firm.

F. E. Breitenbach, formerly vice president and sales manager of Dexdale Hosiery Mills, Lansdale, Pa., has been named sales manager of Huffman Full-Fashioned Hosiery Mills, Morgantown, N. C., succeeding **Robert C. McGuirk.**

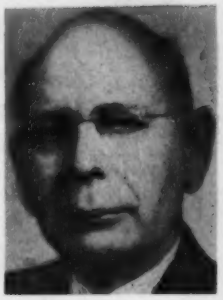
A. Donald Brinton and **William Schumann** have been named vice president of Diamond Full Fashioned Hosiery Co., Inc., High Point, N. C. Mr. Brinton will be controller and Mr. Schumann will be in charge of manufacturing. Company is licensed manufacturer of Fruit-of-the-Loom nylon hosiery.

Tom J. Boyd has resigned his position with Startex Div. of Spartan Mills, Startex, S. C., and has joined sales staff of Bassett-Walker Knitting Co., Basset, Va., and Virginia Underwear Corp., Martinsville, Va.

H. W. Buchanan, for past nine years a member of supervisory staff of Erlanger Mills, Lexington, N. C., has been promoted to plant superintendent. He has been acting superintendent since **J. B. Powell** resigned to become associated with Lockhart plant of Monarch Mills, Lockhart, S. C.

L. J. Carbonetti has become foreman of rayon finishing division for Rock Hill Printing & Finishing Co., Rock Hills, S. C.

S. B. Carson is manager of new Delta Finishing Plant of J. P. Stevens & Co., Inc., Wallace, N. C.; and B. M. Keever is superintendent.



F. ALBERT HAYES, vice president for purchasing of Bigelow-Sanford Carpet Company, Inc., has been named director of the company's recently formed Defense Contracts Division which will be responsible for contracting for defense business in textile manufacturing, machine-tool production, engineering development, and research.

John J. Cochran and **Ralph B. Hood** have been elected directors of Duplan Corp., New York. Mr. Cochran is general manager of company's ten textile mills in U. S. and Mr. Hood is general manager of Duplan of Canada, Ltd.

Madison F. Cole has been promoted from superintendent of Newnan Cotton Mills No. 2 to general superintendent of Newnan Cotton Mills, Newnan, Ga. **Joseph H. Foster** has been named superintendent of plant No. 2 to succeed Mr. Cole.

William S. Coulter, vice president and member of executive committee of Burlington Mills, New York, has retired, but will continue as general counsel, a director, and member of finance committee. He has been with company since it was founded in 1923.

Harry C. Dennison, Pittsfield, Mass., has become overseer of dyeing for North Star Woolen Mill Co., Lima, Ohio,

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NEWS ABOUT MEN (Continued)

succeeding **M. Carrigan**, resigned.

Anthony Dreyspool and **Cornelius P. Gearon, Jr.**, have been elected directors of Wamsutta Mills, New Bedford, Mass. Mr. Dreyspool will be in charge of manufacturer sales and Mr. Gearon in charge of consumer sales.

Albert Edge, for past three years office manager and credit manager of Verney Corp. of Canada, Ltd., Granby, Que., is now comptroller of company.

Harry Eldridge, grandson of the founder of F. C. Huyck & Sons, Renssalaer, N. Y., has been elected chairman of the board, succeeding **James L. Braman**, resigned. **Grenville R. Holden**, formerly vice president of Sylvania Electric Products, Inc., has been elected president, succeeding the late Francis H. Eldridge.

Clarence E. Elsas has been elected president of Fulton Bag & Cotton Mills, Atlanta, Ga., to succeed the late William Elsas. Directors elected include **Norman E. Elsas**, chairman; **Jason M. Elsas**, vice president; **E. A. Cronheim**, vice president and secretary; **J. B. Cronheim**, vice president, and **G. L. Brogdon**, treasurer. **Norman D. Cann**, lawyer of Washington; **E. Monroe Hornsby**, manager of company's New York office, and **Frederick G. Barnett**, of Dallas, Tex., were also elected directors.

Carl Erdman, assistant treasurer of Nolde & Horst Co., Reading, Pa., has joined the armed forces. He is serving as a lieutenant in U. S. Navy.

Russell Fennell has become superintendent of Hyde Park Mills, Inc., Covington, Tenn.

David Freedman, president of Nottingham Woolens, Inc., New York, was unanimously elected recently to the presidency of the New York Chapter of the Lowell Textile Institute Alumni Assn. Mr. Freedman, a member of the class of '38, succeeds **Arthur M. Currier** of Latta Currier Co. **Charles A. Whitehead**, Howes Publishing Company, succeeds **Irwin Smoler** of Smoler Bros. in the post of secretary-treasurer.

William N. Freyer, formerly

TATE B. BOWDEN has been appointed Southern division carpet sales manager for James Lees & Sons Co., Bridgeport, Pa., succeeding William H. Goulder, retired. Mr. Bowden, who has been with the company since 1945, will have headquarters in Atlanta, Ga.

vice president and assistant to the president of Bigelow-Sanford Carpet Co., Inc., has been elected executive vice president of the company. He joined Bigelow in 1946.

F. Grosswirth has become overseer of dyeing at Universal Dye & Finishing Co., Brooklyn, N. Y.

Paul B. Halstead, former secretary of the Cotton Textile Institute, will become head of the newly-created statistical department of the Cone Export & Commission Co., on April 1.

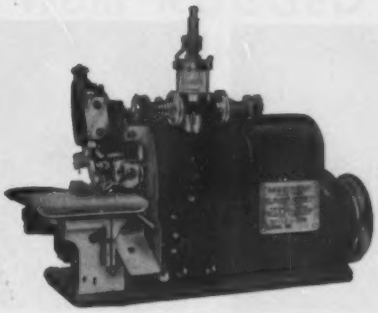
Summers Hawkins has become overseer of weaving for Arcadia Woolen Mills, Inc., Atlanta, Ga. He was formerly with Peerless Woolen Mills, Inc., Rossville, Ga.

Harry Hayes has become overseer of finishing for John Alden Woolen Mills, Inc., Worcester, Mass., succeeding **L. Bickford**, resigned.

William E. Herrick has resigned as superintendent of Utah Woolen Mills, Salt Lake City, Utah.

Milton Hinkis, sales manager of Holly Knit, Inc., Mt. Holly, N. C., has been elected a vice president of company and made a member of board of directors. He will continue to serve as sales manager.

W. D. Hurst has been named general superintendent of Georgia Mills of American Thread Co., Southern Div.,



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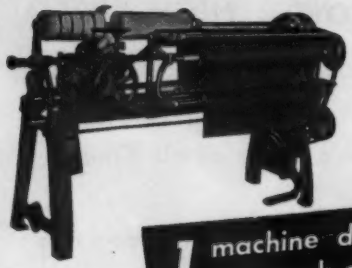

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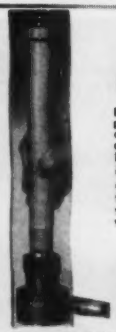

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NEWS ABOUT MEN (Continued)

PETER H. B. CUMMING and E. SCOTT MACDERMOTT have recently been appointed vice presidents of William Iselin & Co., Inc., New York. Both were formerly assistant vice presidents of the company.

with headquarters in Dalton, Ga., **J. D. King** has been named superintendent of Dalton Mill.

Stanley Jessiman, former vice president and general manager of Brookside Mills, Inc., Knoxville, Tenn., has been elected to presidency, which has been vacant for several years. Mr. Jessiman, previously of Raycrest Mills, Pawtucket, R. I., joined Brookside in 1948.

Mark Kelley, assistant superintendent at Assabet Mills of American Woolen Co., Maynard, Mass., has been transferred to American Woolen Co. plant at Norwich, Conn.

Nicholas F. Lahr was elected president of Cooper, Wells & Co., St. Joseph, Mich., at a recent board meeting.

Emil Ledoux has been promoted to overseer of carding at Wyandotte Worsted Co., Central Village, Conn., succeeding **Joseph Miller**, retired.

Allen Leibowitz has been appointed mill superintendent of Indian Orchard Finishing Co., Indian Orchard, Mass.

J. Frank Lipe, vice president and general manager of Linn Mills, Landis, N. C., has been named president succeeding his father, the late G. O. Lipe, one of the founders of the business. Other officers elected at the annual stockholders' meeting were: **P. E. Lipe**, vice president; **L. A. Corriher**, treasurer; **Lane Cox Dry**, secretary, and **William P. Beaver**, assistant secretary.

Robert J. McCann, of Glasgow, Va., has been appointed chief industrial engineer for James Lees & Sons Co., Bridgeport, Pa. Mr. McCann was formerly superintendent of company plant in Glasgow. Other recent appointments include: **Robert H. McFarland**, purchasing agent; **Spencer L. Jones**, director of purchases and sales of bulk worsted and hand-knitting yarn divisions; **Cruse Lewis**, general traffic manager; and **Frederick S. Nichols**, director of industrial and public relations.

Lester N. Mosley, of Manchester, N. H., has become overseer of spinning for Premier Worsted Mills, Raleigh, N. C.

Russ Murphy will become personnel director of Carolina Mills, which includes one mill at Maiden, N. C., three at Newton, N. C., and one at Huntersville, N. C.

Karl B. Nixon, for 23 years with Newnan Cotton Mills, Newnan, Ga., will be new president of mills, succeeding **Wyllis Taylor**, who recently resigned.

Thomas O'Hara has been appointed assistant superintendent of finishing at Wood Worsted Mills of American Woolen Co., Lawrence, Mass. He was formerly associated with Morschner Dye Works.

Angelo Piciotti has become general manager of Glasgo Finishing Co., Glasgo, Conn.

E. W. Paquette has resigned as superintendent of Fairfax Mills, Inc., Pawtucket, R. I.

Joseph C. Patnaude has become master mechanic for Charlottesville Woolen Mills,

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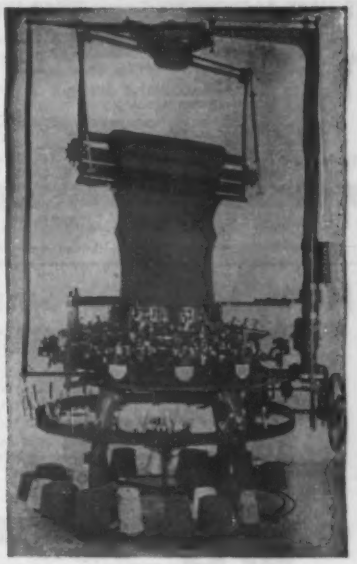
to FINE UNDERWEAR MATERIALS . . .

this is your machine . . .

TOMPKINS MODEL S-1
SINGLE HEAD SPRING NEEDLE KNITTING MACHINE



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News About MEN (Continued)

located in Charlottesville, Va.

J. Harry Pfau, formerly in charge of mechanical research at Alexander Smith & Sons Carpet Co., Yonkers, N. Y., has joined the research department of Bachmann-Uxbridge Worsted Corp., Uxbridge, Mass.

Stanley Prokuski is now assistant to Harry Baldwin, vice president and general manager of Verney Corp., Brunswick Division, Brunswick, Me. Previously he was with Manville Jenkes and Greenville Mills, Inc., Greenville, N. H.

William W. Ragsdale, Jr., has been appointed assistant controller of American Thread Co., New York.

Alex M. Rankin, Jr., former vice president and general manager of Diamond Full Fashioned Hosiery Co., Inc., High Point, N. C., has bought controlling interest in Colonial Hosiery, Inc., High Point, and has become president and general manager of firm. He has resigned his post at Diamond. **Frank Wineskie,** former head of Colonial, is retiring but will continue in an advisory capacity.

R. D. Sanders, formerly treasurer of Morgan Cotton Mills, Inc., Laurel Hill, S. C., has been elected vice president and treasurer. **Julian Butler,** former general manager, has been made vice president in charge of manufacturing.

W. H. Spencer, of Newton, N. C., has been appointed by Burlington Mills Corp. as general manager of its Newton Rayon Mill, Newton, and its Cascade Rayon Mill at Mooresville, N. C., with headquarters at Mooresville.

Henry Staples, former overseer of carding at Assabet Mills of American Woolen Co., Maynard, Mass., is now associated with Henry Klous Co., Lawrence, Mass.

George Stuart, head chemist at Assabet Mills of American Woolen Co., Maynard, Mass., has been transferred to Wood Worsted Mills of same company, Lawrence, Mass.

C. David Reich has joined the synthetic-fabrics department of Reeves Bros., Inc. Formerly sales manager of the industrial and diversified fabrics division of Burlington Mills Corp., he will be in charge of development and promotion of new fibers and fabrics for industrial and automotive uses.

A. Henry Thurston has been named acting director of the newly formed textile division of the NPA. At one time an assistant editor on the staff of TEXTILE WORLD, he has recently been head of the textile section of the Department of Commerce of the U. S., Washington, D. C.

Harold Wainwright has again joined Chalmers Knitting Co., Amsterdam, N. Y., as overseer of dyeing.

Floyd M. Williams has announced his resignation as superintendent and general manager of Hazel Knitting Mill, formerly Radford Knitting Mill, Radford, Va.

OBITUARY

Jacob H. Blaetz, 72, founder of the Blaetz Co., Philadelphia, Pa., died in January.

Fred W. Blanton, 54, organizer of Columbus Mills, Columbus, N. C., died recently.

Eugene S. Graves, 74, president for 23 years of Franklin Process Co., Providence, R. I., died recently. He also served as chairman of the board from 1945 to 1948.

Norman P. Hall, 52, former president of Sterling Engineering & Mfg. Co., Boston, Mass., died in January.

Gurry E. Huggins, 72, president of Martel Mills, Inc., New York, since 1917 and Henrietta Mills, Caroleen, N. C., since 1926, died recently.

News About MEN (Continued)

WILLIAM A. LANG, 66, agent and manager of Bates Mfg. Co. Edwards Dir. Mill, Augusta, Me., until his retirement 10 years ago, died in January. A graduate of Lowell Textile Institute, Mr. Lang was at one time textile engineer for Lockwood Greene Engineers, Inc., New York, and from 1929-30 served as technical advisor to the Russian government.

MacMillan C. King, retired owner of Pelham Mill, Pelham, S. C., and Lavonia Mill, Lavonia, Ga., died recently.

J. W. Lindsay, 55, president of Guilford Hosiery Mills, High Point, N. C., died recently.

A. C. Lineberger, 50, textile executive, died recently. He was president of Acme Spinning Co., president and treasurer of Piedmont Processing Co., and vice president of Knit Products Corp., all of Belmont, N. C. In addition he was treasurer and general manager of Rowan Cotton Mills Co., Salisbury, N. C.

George H. Reiff, 87, retired president and general manager of Susquehanna Woolen Mills, New Cumberland, Pa., died recently. He had been with the firm for 45 years.

Theodore Y. Rogers, 79, retired president of Asheville Hosiery Co., Asheville, N. C., died recently.

H. M. Aderholdt, vice president and assistant general manager of Henry River Mills Co., Henry River, N. C., died recently.

Henry Callaway, 66, a director and brother of the founder of Callaway Mills, LaGrange, Ga., died recently.

Charles C. Keller, 65, retired vice president of Pilot Full Fashion Mills, Inc., Valdese, N. C., died recently. He had been with the company for 25 years.

Hobart A. McWhorter, 53, a member of the board of directors of Anchor Rome Mills, Inc., Rome, Ga., died recently.

Hubert C. Milot, 62, vice president of M & F Worsted Co., Providence, R. I., died recently.

Harold P. Reno, 68, formerly vice president and general manager of Sayles Finishing Co., Saylesville, R. I., died recently.

Robert L. Smith, 77, former director and vice-president of Belding-Heminway-Corticelli Silk Co., Putnam Ct., died recently. He joined the company's predecessor, Brainard & Armstrong Co., in 1888.

Eugene E. Edmiston, 75, plant engineer at Mooresville Mills, Morresville, N. C., died recently.

John N. Farrell, 41, general manager of Defiance Bleachery, Barrowsville., Mass., died recently.

Walter E. Greenwood, 59, manager of Gates Paper Twine Co., Pleasantville, N. Y., died recently. He had been manager of the company for the past 28 years.

Joseph P. Carter, Sr., 71, formerly superintendent for 18 years of Clinton Cotton Mills, Clinton, S. C., died recently.

Louis W. Dugdale, 80, retired superintendent of inspection at Universal Winding Co., Providence, R. I., died recently.

Elwood Ward, 69, former president of the National Assn. of Woolen & Worsted Overseers and the N. Y. State Textile Overseers Assn., died recently. He was superintendent of weaving at Fulton, N. Y., Mills of American Woolen Co. before his retirement.

Patrick A. O'Brien, 85, retired department foreman for Alexander Smith & Sons Carpet Co., Yonkers, N. Y. died recently. He had served the company for 55 years.

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SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:
$1.20 cents per line, minimum 4 lines. To figure advanced payment count 5 average words as a line.
EMPLOYMENT WANTED AND INDIVIDUAL SELLING OPPORTUNITY undisplayed advertising rate is one-half of above rate, payable in advance.
PROPOSALS, $1.20 a line an insertion.

INFORMATION:
BOX NUMBERS care of publication count as 1 line additional in undisplayed ads.
DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).
EQUIPMENT WANTED OR FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED RATE:
The advertising rate is $10.40 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. T.W.

NEW ADVERTISEMENTS received by March 12th, at the New York Office, 330 W. 42nd St., N. Y. 18, will appear in the April issue subject to limitation of space available.

DYER WANTED

New modern plant in North Carolina has opening for a dryer with experience on Viscose and Acetate piece goods. State age, education, experience and salary desired.

P-6237, Textile World
330 W. 42nd St., New York 18, N. Y.

DYER WANTED

2nd shift Dyer wanted by New England Mill. Flat or knit goods experience in dyeing synthetic and natural fibers essential. Textile school training preferred. Please write details regarding background and work experience to

P-8843, Textile World
330 W. 42 St., New York 18, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

CHEMIST FOR the analysis and matching of Textile Dyeing and Finishing Specialties such as detergents, specialty soaps, finishing compounds, sulphonated oils, softeners, etc. Only man with complete experience need apply. Excellent salary for qualified man. Our employees have been informed of this ad and all replies will be held strictly confidential. P-8740, Textile World.

MECHANICAL ENGINEERS, graduate, with five to ten years experience in machine design and mechanisms. Openings are now available for several qualified men to handle mechanical research and development in textile mills as part of the research division for a large mill group. Previous textile experience not required. Salary and advancement commensurate with ability and experience. Location South Carolina. Give details including age, education, experience, marital status and present salary. All correspondence strictly confidential. P-8914, Textile World.

PLANT ENGINEER for Southern manufacturing concern operating cotton mill, bleachery, print works and dye plant. Prefer man 30 to 45 years of age with technical college training, one who has had actual experience in engineering phases noted above. Successful candidate must understand how to supervise maintenance personnel for maximum productive results. Plant located in growing metropolitan area. Starting salary commensurate with educational background and experience. Splendid future prospects for man capable of successfully handling this assignment. Replies held strictly confidential. Address full particulars, and enclose snapshot if available, to P-8830, Textile World.

SELLING OPPORTUNITY OFFERED

CHEMIST SALESMAN with textile-finishing experience. Preference given to one familiar with governmental agencies and practices. Send brief summary of background to SW-9033, Textile World.

POSITIONS WANTED

THROWSTER RAYON, silk and nylon—wide experience in all phases of throwing—rayon and silk crepes—hosiery yarn and all types of rayon twists—desires position as production supt. Employed. Ref. PW-8370, Textile World.

TEXTILE MANUFACTURING graduate, age 25, draft exempt, two years experience in manufacturing, cotton cleaning and fibre testing desires position. PW-9010, Textile World.

TEXTILE CHEMIST, textile school grad. 5 years experience cotton and rayon dyeing and finishing. Color matching and formulation of finishes. PW-8938, Textile World.

(Continued on page 286)

WANTED
TEXTILE TECHNOLOGIST

TEXTILE TECHNOLOGIST with academic background in chemical or mechanical engineering, or physical chemistry, and with theoretical knowledge and industrial experience pertaining to physical and mechanical aspects of textile yarn and fabrics construction from natural and synthetic fibers and filaments. Excellent opportunity in industrial research for top flight man.

CHEMICAL ENGINEER—Young man with some knowledge of textiles or with textile schooling plus additional engineering training required for research work.

New Jersey Location. Please give complete information regarding professional qualifications, work experience and salary requirements in first letter together with recent photograph or snapshot.

P-8437, Textile World
330 W. 42 St., New York 18, N. Y.

WANTED:
EXCELLENT OPPORTUNITY for RECENT COLLEGE GRADUATE

With degree in Textile Engineering or Chemical Engineering. To work for large textile company located in New England on development of synthetic fiber program. Good starting salary. Opportunity for advancement.

P-8864, Textile World
330 W. 42 St., New York 18, N. Y.

WANTED
TRICOT CUTTING PLANT MANAGER

Full charge of cut and sew plant for high quality product, long established and reputable organization. Replies will be held in absolute confidence. Our organization knows of this ad. Please give full details on education, experience and field of responsibility.

P-9005, Textile World
330 W. 42 St., New York 18, N. Y.

MANAGER WANTED
for a Velvet Weaving Mill

Must be experienced on Pile Fabric materials. Call or write to

VELVET TEXTILE CORPORATION
18 Gilbert Street West Haven, Conn.
Phone number West 3-2521

WANTED
LOOM FIXERS

Experienced loom fixer on cam type double shuttle loom.
Jacquard experience preferred.

P-8002, Textile World
330 W. 42 St., New York 18, N. Y.

WANTED
Recent College Graduate

With degree in Physics or Math. to assist in synthetic fiber development program for large textile manufacturer in New England. Excellent starting salary with opportunity for advancement.

P-8863, Textile World
330 W. 42 St., New York 18, N. Y.

SALES REPRESENTATIVE

Sales representative wanted for Southern branch plant by well-established textile chemical manufacturer. Thorough Southern mill experience essential; technical schooling desirable but not important; to service synthetic weaving, throwing and dyeing plants. Previous selling experience not required. Applications for interview and sales training now being considered. Give complete history and experience in first letter.

RW-8810, Textile World
330 W. 42 St., New York 18, N. Y.

MEN WANTED
POSITIONS OPEN

We can place: MGR. pile fab. mill; woolen mill mgr. faon goods fabrics; supt. roller and screen print., dye. and fin., plant; production mgr.-supt. sweaters, mittens, gloves; supt. outerwear mfg.; supt. garnetting, picking and dyeing; supt. rayon weav. and throw.; supts. and asst. supts. silk throw. plants; mgr. jacket mfg.; worsted yarn supt.; supt. woven label mill; asst. supt. rayon-silk mill; asst. supt. narrow fabrics; asst. personnel mgr.; weaving supervisor narrow fabrics.

OVERSEERS FOR FOLLOWING DEPTS.: woolen carding; dyeing woolen raw stock and piece goods; rayon piece goods dyeing; rayon piece goods fin.; woolen and worsted fin.; tentor room; worsted combing; rayon-cotton weaving; garnetting; picking; sewing fabric pieces; silk throwing; jersey cloth fin.; worsted combing; package dyeing; warp. and wind. narrow fabrics; training supervisor; punched felt foreman; o/s, worsted drawing; overseers woolen and wstd. weaving.

SECOND HANDS FOR FOLLOWING DEPTS.: woolen and worsted fin.; woolen carding; woolen frame spin.; cotton spin.; cot. weaving; cot. carding; rayon-cotton weaving; woolen dyeing.

MECHANICAL and plant engineers; designers and draftsmen; electrical engineer; industrial and time study engineers; chemists, chemical engineers and laboratory men; expert gill box fixer; designer narrow fabrics; color matcher; overseer weaving, finishing or throwing for chemical salesman in South; salesmen and demonstrators for dyestuffs, chemicals, oils, soaps, etc.; knit. mill foremen and fixers; fixer-foreman tricot mach.; jac. cotton and rayon designer for N. Y. City; fixers for woolen males and frames; examiner and plush loom fixers and weavers; worsted pin setters; woolen, cotton, worsted and rayon loom fixers for United States and foreign countries.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the textile mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston, Mass.
Telephone Liberty 2-6547

SPECIALISTS IN PLACING
TEXTILE MILL EXECUTIVES

MANAGER WANTED

We have an excellent opening for capable production manager to take charge of knitting and cutting and sewing plant manufacturing T shirts, sweat shirts, etc. Plant located in large Southern city, excellent living conditions, attractive proposition to right party.

P-9010, Textile World
330 W. 42 St., New York 18, N. Y.

Professional Services, page 297—Equipment Wanted, pages 286 & 296

—THE UNUSUAL—

Do you want to increase your business by offering new brilliant styles and outstanding qualities in woolen and worsted fabrics? Young designer with artistic abilities and many years of international manufacturing experience will consider offer from reputable firm. I am 41 years old, married and considered to be of exceptional honesty and integrity. Write in complete confidence.

PW-8951, Textile World
330 W. 42 St., New York 18, N. Y.

POSITIONS WANTED
(Continued from page 285)

WEAVING POSITION Wanted: Now employed as superintendent of weaving in large mill. Will consider job in Canada, U.S.A., Mexico, or South America. Textile graduate, under 40, 20 years experience, (majoring in weaving). Would like position with chance of advancement to superintendent or manager. Reply PW-8946, Textile World.

CHEMICAL ENGINEERING Graduate—35 yrs. experience dyeing cotton yarns—skein and package—interested in associating with reliable firm as salesman or sales demonstrator. Prefer Boston Home Office. Write PW-8790, Textile World.

OPPORTUNITIES WANTED

SELLING AGENTS many years selling experience with New York Office and big following Weaving and Knitting Trades; desires a line of filament yarns and cotton yarns. Willing to devote entire time to a line with volume business. RA-8950, Textile World.

WANTED FOR Benelux Sales Representation Knitting-Machinery, Belgian First Class Firm, possessing offices and exhibition-rooms in center of Brussels, having excellent connections with knitted fabrics makers, wants exclusive agency of constructors of knitting-machines. RA-8947, Textile World.

CONTRACT WORK AVAILABLE

Wanted: Manufacturing facilities requiring Weaving Looms 55" to 75" in width with Jacquard attachment. Cotton warp, rayon weft. 130 to 170 threads per square inch. CWA-8851, Textile World.

PATENTS

Consult: Z. H. Polachek,
Reg. Patent Attorney, 1234 Broadway, New York 1, N. Y.

GERMAN AGENCY FOR TEXTILE MACHINERY SEEKS

Manufacturers or sellers of *lace curtain* (bobbinet) machines new or used.

TH. & A. BRANDT
Aeuss. Sulzbacher Str. 18, Nuremberg, Germany

(2) Unit Weaving Plant comprising:—

Ten (10) 76 Inch Crompton & Knowles Looms, 4x4 Box.

Ten (10) 82 Inch Crompton & Knowles Looms, 4x4 Box.

Individually motor driven.

Complete auxiliary machinery. Manufacturing fancy Worsted and Woolens. Men's Wear and Women's Wear fabrics. Plant now in full operation. Reasonable figure.

BO-8950, Textile World
330 W. 42 St., New York 18, N. Y.

AVAILABLE MANUFACTURING CAPACITY

Large Well Known and Long Established BRITISH ENGINEERING ORGANIZATION offer fully equipped Manufacturing Capacity (including Gear Cutting—all forms of Machinery and Assembly) to U. S. Manufacturer wishing to produce and market a stable product in the Sterling Area at Competitive Prices. Full particulars and all enquiries to:

CW-8845, Chemical Engineering
330 W. 42 St., New York 18, N. Y.

BRICK BUILDING FOR SALE

16,000 square feet of manufacturing space—
Regular Textile Mill construction — Equipped with sprinklers
Ample Labor — Village near by —
Located in Gaston County, North Carolina —
Nice stream of water on property —
In position to equip with machinery and make a 5000 spindle Carded or Combed Yarn unit.
Will sell building as is and/or with installed machinery

VERY REASONABLY PRICED

W. D. LEWIS
Textile Machinery and Equipment

P. O. Box 826 Gastonia, N. C. | Phone: Day 5-2265 Night 5-4998 | 840 N. Marietta Gastonia, N. C.

BUILDING FOR SALE

Located Canada—50 Miles from Montreal

24,000 Square Feet of Floor Space
Brick Construction
Immediate Possession

JAMES E. FITZGERALD
TEL. 8-5616

10 Purchase St. Fall River, Mass.

GENERAL MACHINE WORK

- Precision hole drilling from .002 up
- Small precision parts
- 10 and 20 ton punch press work
- Spinning Rings Reground, seat regrooved and polished

E. W. KOCH
220 Arch St. Cumberland, Md.
Phone 903-M

Without obligation send for folders containing information on humidification or dehumidification, also on humidity indicators and recorders

HUMIDITY
Is Our Business—And We Know Our Business
ABBEON SUPPLY CO.
58-10 41 Drive, Woodside, N. Y.

WANTED
(Additional Wanted ads on page 296)

WANTED

Large engineering firm wishes to acquire several complete textile plants through purchase of (1) capital stock, (2) assets, (3) machinery and equipment, whole or in part. Personnel retained where possible, strictest confidence.

Box 1222
1474 Broadway New York 18, N. Y.

WANTED
6-8 STRING WASHER
P. O. Box 208, West Warwick, R. I.

BOUGHT — SOLD
Glycols—Cellosolves—Ethanolamines
Phthalic—Maleic—Penta
Titaniums—Bichromates—Dyes—Colors
Soda Ash—Caustic Soda, etc.
CHEMICAL SERVICE CORP.
80-10 Beaver St. New York 5, N. Y.

WANTED
VACUUM SUCTION UNIT
App. 7' x 6½' x 3'
HOLD TYPE
JACK BERENS
443 Broadway
New York, N. Y. CAnal 6-7572

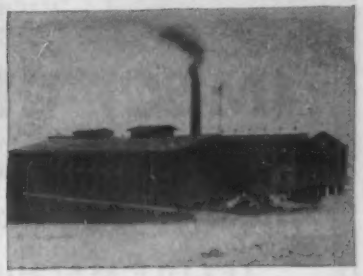
DYESTUFFS
Will buy your surplus and obsolete dyes and chemicals for cash.
NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1918

WANTED
Saco Lowell Twisters Two Ply Dolly Roll Type
200 Spindles
2½" Diameter Dolly Roll
2¾" Ring
5½" Traverse
Rabbeth Spindle
Tape Drive Spindle
Heavy Type Builder Motion
W-8929, Textile World
330 W. 42 St., New York 18, N. Y.

Executive Offices and New York Warehouse

McDOWELL ASSOCIATES INC.

FOR SALE



Hudson, New York Warehouse

PARTIAL LIST---IMMEDIATE DELIVERY

REBUILT— WAREHOUSE STOCK

1 C&M BATCHER 66"
1 REAMING HEAD for Reel
1 Cleveland Wet BRUSH 66"
350 M automatic BOBBINS 8-¾"
1 P&W BRUSH 2 roll 66"
1 Granger CALENDER 3 roll—43½"
1 Cashko 48" TAPE CONDENSER, 112 ends
1 S&F Ceiling CONDENSER
1 D&F rub CONDENSER, double bank 48"
1 P&W DEWING MACHINE 66"
1 P&W Combination DOUBLER and WINDER 66"
1 P&W Springfield Combination DOUBLER AND WINDER 66"
1 Winder DOUBLER AND WINDER 66"
1 P&W Springfield DOUBLER AND WINDER 66"
1 P&W model E DOUBLER AND WINDER 72"
1 Schofield DOUBLER AND WINDER 90"
1 Werner 72" EXAMINING MACHINE, mtrd.
1 S&U EXTRACTOR 48"
2 AMICO EXTRACTOR 72" V belt drive, mtrd.
1 Gessner Vacuum EXTRACTOR 66"
1 C&M Picker FEED 50"
1 Hardwood Picker FEED 44"
1 C&M FOLDER 40"
1 E&H FOLDER 46-¾"
1 E&H FOLDER 47½"
7 Roy Traverse Card GRINDERS 48"—60"
2 Roy Floor Card GRINDERS 60"
1 ROY Napper GRINDER 84"
1 D&F Napper GRINDER 90"
3 Bahnson HUMIDIFIERS 16" impeller
2 C&M INSPECTING MACHINES 84"
6 C&K LOOMS 4x4 box 92"
1 Garry BB LUMBER 48"
1 Starch MANGLE 2 roll 50"
3 P&W MEASURING MACHINES 66"
1 Woonsocket NAPPER SA 12 rolls 72"
1 D&F NAPPER, DA 24 roll 72"
1 Gessner NAPPER, DA 18 roll 80"
2 D&F NAPPERS, DA 24 roll 80"
1 Woonsocket NAPPER, BB DA 24 roll 84"
1 D&F NAPPER, DA 24 roll 86"
2 P&W Measuring PERCHES 50"—66"
3 Anderson Power PERCHES 72" gear reducers
2 Werner Power PERCHES forward and reverse 93½"
1 Parkhurst Burr PICKER 24"
1 Multiplex Burr PICKER 36"
2 C&M Fearnaught PICKERS 48"x48"
1 Gessner Rotary Steam PRESS 66"
1 Voelker Rotary Steam PRESS 84"
1 Nash L4 Vacuum PUMP
2 Van Vlaan QUETCHES 2 roll—50", 65"
1 QUETCH 3 roll—50"
1 REEL for loading and unloading Extractor
1 REEVES #3 enclosed DRIVE, class E
1 Gessner SCUTCHER 80"
15 Birch-Dinsmore Rotary Postpower SEWING MACHINES
8 C&M Dinsmore Railway Portable SEWING MACHINES 50"-52"-56"-60"
1 P&W Auto. SHEAR 4 blade 60"
1 English type velvet SHEAR single blade 82"
1 C&M SHEAR single blade 66½"
1 P&W SHEAR single blade 66½"
1 C&M SHEAR double blade 66"
3 P&W SHEARS, double blade model B 66½"
3 P&W SHEARS, double blade model A 66½"
1 C&M STEAMING, SHEARING AND BRUSHING MACHINE with 2 double blade 66½" shears
1 Hunter 2 roll SOAPER
5 Whitin SPINNING FRAMES 2½" ring, 180 spdls.
3 Whitin SPINNING FRAMES 2-¾" ring, 180 spdls.
1 C&M TACKING MACHINE 90"
1 Llewelyn TRANSMISSION with 5 HP motor
1 Van Vlaan. TUBER 80"
1 D&F TWISTER 200 spdls. one side fancy
2 D&F WARP REELS 82" beamer, etc.
4 C&M type CO and CN WINDERS 50"-80"
1 Universal #90 WINDER
1 S-L Cone WINDER 16 spdls.
2 Campbell & Clute bottle WINDERS, 40 spdls. ea.

CARDING AND SPINNING

1 D&F worsted BALLING HEAD
6 Ref BALLING MACHINES 16 sp. each, 7" ga.
1 D&F Iron Finisher CARD 60x60 with 36" dia. doffer
1 D&F single cylinder Iron CARD 60"x54" dia. with ring doffers, 16" dia.
3 Newton Noble COMBS 32/36 circles, 12" collers
1 Tape CONDENSER 60" single rub, 120 end
2 P&S Ceiling CONDENSERS 36" x 18" dia. screens with lints
1 Reiner Magazine CREEL, double cone, 800 live ends
1 Warp Compressor Magazine CREEL, cone type, 410 live ends
1 Sargent Rag DUSTER, model #222, 12" blower
3 GARNETTS double cylinder 20" x 60" with lappers, compression rolls, running out aprons
1 Butterworth Rag PICKER, BB cyl. 18" wide
1 S-L Rag PICKER, BB cyl. 22' x 38" dia.
1 Schofield BB Rag PICKER, cyl. 29" x 30" dia.
21 Whitin SPINNING FRAMES 192 and 216 spdl. units, 1½"—1-¾" rings, BB cyls., tape drive
1 S-L WARPER, High Speed, 54", 30" beam head
1 Cocker tricot WARPER 45" for 21" bobbins
2 D&F WARP REELS, pin type, 92" beamers, take 30" flange
1 Foster WINDER, model #103, 80 spdls. wood cones
1 Lassaby Jr. T. cop WINDER, 30 spdl. cop 12" long
30 Universal #90 WINDERS, 20 spdls.
1 Universal ROTOCONER #44—40 spdl.

LOOMS

10 Draper E 40", 2 harness, belt
18 Draper D 48-¾", B.S. belt driven
12 Draper D 52", 2 harness, mtrd.
12 Draper E 50", 20 harness, mtrd.
16 Draper D 62", 2 harness, mtrd.
30 Draper D 72", 2x1 box. 16 harness, mtrd.
4 Draper O 2-94", 2-96", mtrd.
30 C&K 48", 2x1 box, 12 harness, mtrd.
144 C&K 50", 2x1, auto. 20 harness, mtrd.
90 C&K 52", 2x1, auto. 20 harness, mtrd.
73 C&K S-5 54", 2x 1 auto. 20 harness, mtrd.
38 C&K 54", 2x1, auto. 25 harness, mtrd.
18 C&K 62", 4x4, 25 harness, mtrd.
14 C&K 70", 4x4, 25 harness, mtrd.
36 C&K 82", 4x4, 25 harness, belt driven
16 C&K 82", 4x1, auto. 25 harness, mtrd.
10 C&K 88", 4x4, 25 harness, mtrd.
7 C&K 110", 4x1 auto. 25 harness, mtrd.
3 C&K 110", cam, 4x1, auto. 6 harness, mtrd.
40 Plush, double shuttle, 60"
40 Velvet, double shuttle, 58"

COMPLETE WOOLEN BLANKET MILL
Carding through Finishing

EXCLUSIVE SALES AGENTS
for
HOLTZ "High Speed" Knitting LOOMS

EXPORT SALES AGENTS
for
WERNER MACHINE COMPANY
D. R. KENYON & SON

McDOWELL ASSOCIATES, Inc.

2568 Park Avenue — Bronx 51, New York

Tel.: MElrose 5-6741

MACHINERY LIQUIDATING COMPANY

⟨MLC⟩ CERTIFIES VALUES

Make This Your Headquarters For Good Used and Reconditioned

TEXTILE MACHINERY

We can offer individual machines or a complete plant

Write, Wire or Phone us your Requirements.

WANTED YOUR IDLE AND SURPLUS EQUIPMENT

We Buy Outright or Can Get You Highest Prices for Your Non-Productive Equipment.

Write or Phone us Now.

WANTED—OPENING • CARDING • COMBING • SPINNING • CALENDERS • LOOMS, ETC.

MACHINERY LIQUIDATING COMPANY

A Dealer of Recognized Reliability

DOMESTIC AND EXPORT

33 W. 42nd Street, New York 18, N. Y., Phone: Pennsylvania 6-8014

224 So. Michigan Ave., Chicago 4, Ill., Phone Harrison 7-7140

WAREHOUSE: Hawthorne, N. J., 4th Ave., Phone: Hawthorne 7-4380

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

FYANS & LIST OFFER FOR IMMEDIATE DELIVERY

DRAPER LOOMS
All Motorized

50—X 42" cloth
98—XK 44" cloth
28—XK 50" cloth
12—XK 54" cloth
108—E 44" cloth
125—E 56" cloth
336—E 60" cloth
12—Mod D 88" cloth
44—Mod D 74" cloth

MISC. DRAPER LOOMS
All Belt Driven

50—P 40" cloth
34—L 46" cloth
2—D 40" cloth
4—H 80" cloth
3—D 58" cloth
4—P 66" cloth
36—E Bag 21½" cloth

106—C & K TERRY TOWEL LOOMS

28"—36" cloth, all automatic & belt-driven, 2x1 and 4x1

C & K W-2 AUTOMATIC LOOMS

24—4x1 96" b.s., age 1936, 550V motor

SPINNING FRAMES

54—Saco-Lowell 2¾" ga.—tape drive, 208 spdls. ea., belt driven
30—Whitin 3½" ga.—tape drive, 276 spdls. ea., belt driven
3—Whitin 4" ga.—tape drive, 216 spdls. ea. belt driven

1—Smith-Drum 500# Package Dyeing Machine, 1943. 550V motor with Extractor and Dye Kettle — all stainless steel. 2 Trucks, Loader and Unloader. Excellent condition
1—Smith-Drum Skein Mercerizing Machine with pump. 12 poles each side. Motor driven (without motors)

MISCELLANEOUS

50—Stafford Rayon Shuttle Changing Looms—40" cloth, motorized
3—Foster 103 Winders—100 spdls. ea., wooden cones, 2 mtrs.
94—Deliveries Saco-Pettee Drawing Frames—4 roll, good condition

16—45" H&B CARDS—26" dofters, 12" coilers
56—Whitin D-3 Combers—8 hds. ea., 12" coilers
10—Whitin Ribbon Lappers—10½"—11¾" lap, motorized
10—Whitin Sliver Lappers—30 ends, 9¾" lap, motorized
1—Analytical ale w/glass enclosure
1—Riggs & L...board Flexline Tester and Baking Unit—550/60/3
2—Davis & Furber 2" Double Acting Nappers—24 rolls
1—Roy Napper Grinder
1—Davis and Furber 80" Double Acting Napper—24 rolls
10" Vulcanized fibre roving cans (used)

MISCELLANEOUS (Cont.)

12" and 14" Vulcanized fibre roving cans (new)
3000—Wooden Cones for #44 Winder (cork covered)
1030—12" Pioneer Harness Frames—45½" with heddles (practically new)

All Orders Subject to Prior Sale

FYANS & LIST MACHINERY CO., INC.

P. O. Box 454 • Phone 5-7431 • Fall River, Mass.

UNUSUAL LIQUIDATION

MODERN RAYON DYEING & PRINTING PLANT

APPROXIMATELY $800,000

EQUIPMENT PURCHASED NEW 1947. FULLY EQUIPPED FOR BOX, JIGG, PAD AND VAT DYEING: RESIDUAL CONTROL FINISHING . . . 150,000 SQ. FEET EXCELLENT MILL BUILDINGS, 2 BOILER PLANTS, SOFT WATER SOFTENER.

BEAMERS

1—Hinnekens Beamer, 60" width with Merrow R.R. sewing machine. M.D.
1—Van Vlaanderen Beamer, 50" width with Merrow R.R. sewing machine. M.D.
1—Hinnekens Beamer with measuring roll M.D.
1—Morrison Beamer, 60" width, 3 brass rollers. M.D.
1—Morrison Beamer, 50" width, clutch assembly drive. M.D.

BOIL OFF SCOURING RANGE

1—Caustic Bath Range, 60" width, consisting of: Full width steel tank, 3 sections, with two s.s. drums, connected to 3 s.s. Hope Washers, 3 s.s. compartments ea., 14' wide, s.s. ponys and reels, s.s. unloading reels. Three caustic storage tanks with recirculating pumps.

DYEING EQUIPMENT

6—Van Vlaanderen Dye Jiggs, 50" width type 2730, tensionless, all stainless steel, 5 hp. M.D. auto. reversing motion. Age 1948.
6—Van Vlaanderen Dye Jiggs, 76" width, tensionless, all stainless steel, 5 hp. M.D. auto. reversing motion. Age 1948.
5—Hinnekens Dye Becks, 12' wide, all stainless steel, self-supporting 45 SS sticks, s.s. ponys and reels. M.D. 3 hp., 12" unloading reel. Age 1948.
2—Rodney Hunt Dye Becks, 12' wide, all stainless steel, SS ponys & reels, wooden let-off reel. M.D. 3 hp.
3—Hinnekens Dye Becks, 6' wide, all stainless steel, s.s. ponys & reels, wooden let-off reel. M.D. 3 hp. Age 1948.
1—Van Vlaanderen Duplex Dye Beck, 6' all stainless steel, s.s. pony and reels. M.D. 3 hp.

RESIDUAL SHRINKAGE RANGE

1—Dalglish Pin Tenter Finishing Range, 60" width, 100' long. Age 1948, consisting of:
a) Morrison Microset Padder, 60" width, 15 ton pressure, 2 rolls, 1 rubber, 1 steel as pan.
b) 3 sets of Mt. Hope Cloth guiders.
c) 2 Storage Tanks, stainless steel with agitators, pumps & Sarco Temp. Control.
d) Mt. Hope Continuous Feeder with guiders & tension device.
e) Proctor & Schwartz Roller Cloth Pre-Dryer centrifugal type, circulating fans, ball bearing s.s. rollers.
f) Proctor & Schwartz Dalglish Pin Tenter Frame, 100' long x 60" wide, single run, auto. guiders, selvage uncurlers, over-feeding device, auto. width control, complete with Proctor & Schwartz Housing.

PADDERS & MANGLES

1—Hinnekens Pneumatic Padder, 2 rubber rolls 60" wide, 14½" dia. rolls, 12 ton pressure s.s. pan, with two storage tanks.
1—Hinnekens Pneumatic Padder, 2 rubber rolls, 50" width, Link belt gear reducer, Foxboro Temp. controls. M.D.
1—Padder, 50" width, 2 rubber rolls, cloth expanders, s.s. storage tanks and feed tanks pump. M.D.
1—Hinnekens Padder, 2 rubber rolls, 65" width level pressure. Reeves drive #6, s.s. pan, M.D.
1—Van Vlaanderen Padder, 2 rubber rolls, 48" width, Mt. Hope Expanders and Guiders, Reeves #6, class E. M.D.
1—Van Vlaanderen Padder, 65" width, 2 rubber rolls, lever pressure, Reeves #6, M.D.
1—Hinnekens Pneumatic Mangle, 2 rubber rolls, 52" width, 12 ton pressure, Reeves #6, s.s. pan.
1—Hinnekens Mangle, 2 rubber rolls, 52" width lever pressure, Reeves #6, s.s. pan, M.D.

DRYING MACHINES

1—National Loop Drying Machine, 60' long, 16 fans, 183" width, 16 C&W, 3 hp. mimeo, wear resistant sticks. Built 1946.
1—Proctor & Schwartz Cure Dryer, 113¾" width, 5 fans, 2 Maxon Premix gas units, 2 sets Foxboro Temp. Controls, fibre glass poles, 12'2" long x 63"10¾" wide, 13'7" high, for Dalglish Range.
1—Philadelphia Loop Dryer, 60" width, 3 fans, Lewellen. M.D.
1—Philadelphia Loop Dryer, 54" width, 3 fans, M.D.
1—Set Dry Cans, 16 cans, 22" dia. 96" width, vertical stack.
1—Van Vlaanderen Net Dryer, single line, five tiers, 4 fans, M.D.

TENTER FRAMES

1—Butterworth Tenter Frame, 20' long, 60" width. 2 Lundt gas burners, 2 steam boxes, M.D.
1—Hinnekens Tenter Frame, 60' long, 60" width, 4 Lundt gas burners, Reeves remote control speed changer, M.D., 1948.
1—Van Vlaanderen Tenter Frame, 30' long, 50" width, 2 steam boxes, gas burners, W&J clips, Reeves, M.D.
1—Van Vlaanderen Tenter Frame, 90' long, 60" width with National housing, 8 fans, W&J elec. guiders.
1—Windsor & Jerauld Tenter Frame, 60' long, 60" width, gas burners, M.D.
1—Butterworth Tenter Frame, 50' long, 50" width, gas burners, M.D., Reeves.
1—Textile Finishing Co. Tenter Frame, 40' long, 50" width, high speed clips, M.D.
1—Van Vlaanderen Tenter Frame, 30' long, 50" width.

MORRISON WILLIAMS UNITS —60" WIDTH

a)—Morrison Microset Padder, 60" width, 2 rolls, 15 ton pressure, Mt. Hope Expander, s.s. pan.
b)—Morrison Williams Units, 3 stainless steel tanks, 2 sets nip rolls, 4 storage tanks, temp. controls & agitators, Foxboro liquid leveler, auto. guider and expander, 60" width. Age 1948.
c)—Continuous Mt. Hope Feeder, 60" width.

MORRISON WILLIAMS UNITS —50" WIDTH

a)—Morrison Williams Units, 3 stainless steel tanks, 2 sets nip rolls, 4 storage tanks, temp. controls & agitator, Foxboro liquid leveler, auto guiders and expanders, 50" width. Age 1948.
b)—Werner Pneumatic Padder, 60" width, 2 rubber rolls.
c)—Mt. Hope Continuous Feeder, 52" width.

CALENDERS

1—Van Vlaanderen Hydraulic Calender, 50" width, heavy duty, 3 rolls, 2 steel, 1 paper roll, accumulator, pump.
1—Textile Calender, 64" width, 3 rolls, 2 paper, 1 steel roll, lever pressure, M.D.
1—Textile Finishing Co. Calender, 50" width, 3 rolls, 2 paper rolls, 1 steel roll, lever pressure, M.D.
1—Van Vlaanderen Hydraulic Calender, 50" width, 4 rolls, 2 paper rolls, 2 steel rolls, with accumulator, pump.

EXTRACTORS

1—Suction Extractor with Beamer—60" width with overhead heater.
1—Suction Extractor, 60" width, 2 rubber rolls, Mt. Hope cloth guiders, heater-type opener.
1—Tolhurst Centrifugal Extractor, 60" width, open top, self-balancing, M.D.
1—Hercules Centrifugal Extractor, 60" width, open top, self-balancing, M.D.

DECATIZERS

1—Van Vlaanderen Decatizer, 50" width, Nash L-4 vacuum pump. Age 1947.
1—Van Vlaanderen Decatizer, 60" width, Nash L-4 vacuum pump. Age 1947.
1—General Machinery Co. Decatizer, 52" width, Nash L-4 vacuum pump. Motor driven by 10 hp. motor.

CLOTH ROOM

4—Hinnekens Cloth Examining Tables, 60" width, tilting type, variable speed, reversible, measuring device, M.D. Age 1948.
4—Van Vlaanderen High Speed Tubers, 60" width, variable speed, tissue paper attachment. Age 1948.
1—Van Vlaanderen High Speed Tuber, 60" width, variable speed, measuring drum. Age 1948.
1—Van Vlaanderen Tuber, 60" width.
2—Van Vlaanderen Tuber, 50" width.
12—Singer Sewing Machines
16—Merrow Sewing Machines

PRINT SHOP

1—Textile Print Machine 45" width, 14 colors, 24 yd. blanket, back rigging, Blanket Washer, Dry Tower and 35 hp. B.T.A. motor.
1—Rice, Barton & Fales Print Machine 44" width, 10 colors, 15 yd. blanket, back rigging, Nylon Washing Unit, Dry Tower and 35 hp B.T.A. motor.
1—Rice, Barton & Fales Print Machine 43" width, 10 colors, 10 yd. blanket, back rigging, Nylon Washing Unit, Dry Tower and B.T.A. 35 hp motor.
1—Textile Print Machine, 64" width, 8 colors, 24 yd. blanket, back rigging, Dry tower and B.T.A. 20 hp motor.
1—McDonald Print Machine, 50" width, 13 colors, partial back rigging and dry tower and B.T.A. 50 hp.
1—Rice, Barton & Fales Hydraulic Mandrel Jack.
1—Textile Ager, 16' long x 56" width, 26 top rollers, 24 bottom rollers. M.D.
1—Textile Ager, 24' long x 64" width, 35 brass top rollers, 33 brass bottom rollers. M.D.
1—Textile Ager 18' long x 60" width, 27 brass top rollers, 26 brass bottom rollers.

PALMERS

1—Van Vlaanderen Palmer Tenter Unit 60" width, V.V. 2 roll mangle, Palmer cylinder 60" vertical type with Van Vlaanderen Tenter Frame 50' long x 60" wide, 50' housing with steam unit and electric guiders.
1—Morrison Palmer 60" width x 60" dia., jacketed cylinder, one head cylinder, compensator connected with Morrison 2 rubber roll Quetsch 60" width.
1—Van Vlaanderen Palmer 60" width x 60" dia., double bolted cylinder, overhead cylinder, compensator connected with Van Vlaanderen 2 roll Quetsch 58" width.

GENERAL DYEING & FINISHING

1—Sipp-Eastwood type Soapy Box.
1—Opening Reel, oval shape, 96" width, M.D.
1—Van Vlaanderen Quetsch, 65" width, 2 rubber rolls.
1—General Quetsch, 50" width, 2 rolls, lever press.
2—Scutchers & Openers, 42" width, 2 rubber roll M.D.
1—Mercomatic Singer with carbon gas generators M.D.
1—Button Breaker, 54" width, 18 rollers, 2 rubber expanders M.D.
1—Van Vlaanderen 2 Bag G.L. Print Washer, cypress wood, 4 reels, 20' long. Flaw box with 11 brass rollers, 70" width, Reeves M.D. Age 1948.
2—Textile Copper Mixing Kettle, vertical.
1—Eppenbach Electric Mixer, Model 11634.

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1—Fletcher Whirlwind 48" Extractor, stainless steel basket, with safety cover, motor driven.
2—Johnson & Bassett Giant Packages Mules (in original crates).
2—Fales & Jenks Novelty Twisters, 3" rings, 4" gauge.
8—Crompton & Knowles S-3 Looms, 72".
2—Smith & Furbush Garnetts, double cylinders.
1—American Cascade 2-compartment Washer.
1—Rice, Barton & Fales 8-color 60" Print Machine.
1—Dye Kettle, stainless steel lined, 6-string, motor driven.
1—New Stainless Steel Can, 80" face x 72" diameter.
1—Sheridan 9A Embossing Press, 26" x 54", individual motor driven with some new embossing plates.
1—Morrison 30' x 60" wide Tenter Frame, enclosed drive.
1—Johnson & Bassett Mule (crated for export), 312 spindles.
1—Rodney Hunt Wring Master, 78" stainless steel immersion tank.
1—S-Can Dryer, 60" face x 36" diameter.
1—Birch 66" Ceiling Scutcher.

1—Tolhurst 40" Extractor, V-belt motor drive, suspended type, M.D.
1—Hunter 48" Shredder, ball bearing.
1—Hunter Stock Dryer, with conveyor and automatic feed.
1—Hurricane 3-fan, 6 section Section Dryer.
1—Franklin Package Dyeing Machine.
27—50" Drying Cans.
1—Procter & Schwartz Loop Dryer, double line, with motor and drive.
1—Van Vlaanderen Net Dryer, 6 tiers, motor driven.
1—Cocker Warper, Drum type.
1—Warp Compresser magazine creel, 800 running ends, electric stop motion.
3—Foster #30 Winders, with tube and cone attachments.
1—Textile Finishing Machine Co. 5-bowl heavy duty Calender, 54".
1—Smith Drum Yarn Mercerizing Unit.
1—Procter & Schwartz Blamire Lapper.
2—Davis & Fruber Sample Cards, New.
1—Pegg Dyeing and Finishing Machine.
1—5-cylinder 60" All Stainless Steel Boil-off Machine.
12—Draper XK Looms, 59" reed space.

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1—Sargent 42" Picker Feed
1—Whitin 40" Cotton Card Feed (New)
1—Hunter 7 section Raw Stock Dryer
1—Sargent 48" Rag Duster
1—D. & F. 7' all iron Cone Duster
2—Schofield 48" automatic Duster (box)
2—P. & S. 30" Ceiling Condensers
1—P. & S. 36" Ceiling Condenser
1—D. & F. 48" Fearnaught Mixing Picker
2—D. & F. 6 bar mixing Pickers, 54", 48"
1—Dodge Undershot Shoddy Picker
1—Sargent 36" Duplex Burr Picker
1—Schofield 48" Carding Hair Picker
1—S.F. 36" Lumper, ball bearing
3—Hussong 500 lb. Stock Dye Kettles
1—Set (2 Cyl.) D. & F. Cards 48 x 60
4—P. & S. 2 Cyl. Garnetts, 20 x 60
2—Tolhurst 48" S/S Extractors (New)

WARPING AND WEAVING

4—D. & F. or Altemus Warpers—rebuilt to order—82"—120". Pin or Pinless
1—Cocker Rebeamer—60" beams—New
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4—C. & K. 62" 4x1 automatic Looms
12—C. & K. 92" (4x4) Box Looms
2—L. & G. Chenille Cutters

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1—Universal 60 G.F. 96 sp. Cone Winder
1—Foster, Mod. 101, 100 sp. Cone Winder
1—Foster Mod. 12 Cone Winder, 40 sp.
2—J. & B. Jackwinders, 80 sp. & 120 sp.
6—Lindsay Hyde Skein Reel (40 sp.)
2—Whitin Quillers 2¼" Gauge (long chain)
1—Lazenby 15 sp. Cop Winder

FINISHING

1—Perkins Cloth Filer, 72" traverse
1—Paper Makers Felt Gig, 170"
1—Hunter No. 10 Fulling Mill
1—Geesner Steaming Machine (Cloth)
2—Birch Bros. Doub. & Tacking Mach.
1—Woonsocket 84" D. A. Napper, 32 rolls
1—Bay 80" Napper Grinder
1—P. & W. 60" 4 cyl. Brush & Sander
2—Teasle Gig's, double cylinder
1—Nash L-5 Hytor Pump with Mtr., slotted pipe
2—Rope Soaping Machines
1—Birch Bros. 72" Scutcher
1—Yorkshire Crab 72"—3 bowl
1—S/S Lined 66" Wetting-out Tank with squeeze rolls
1—Set Dry Cans (12) 60"
1—Set Dry Cans (4) 40"
1—P. & W. Lancashire 92" Cloth Boarding Machine
1—Windle 60" Cloth Doubler & Meas. Mach.
2—P. & W. 66" Cloth Doub. & Meas. Mach.
1—Windle 66" Cloth Roll. & Meas. Mach.

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750 M flat steel heddles, 12", and 14".
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1200 live ends of Universal Magazine creel.
3500 Heddle frames, 69" to 72" for 12" heddles.
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Large lot of Model "D" parts (new).
Lot of Worsted temples and parts.
Drop wires, caps, tubes, spindles, spools, bobbins, fibre cans, beams and heads, and reeds.

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NOW we invite your inspection at Atlanta, Georgia of our most recent purchase, the new and modern machinery and equipment formerly owned by Atlanta Woolen Mills.

THIS IS A MODERN UP-TO-DATE 12-SET, 60 LOOM WOOLEN MILL, COMPLETE WITH DYEING, FINISHING AND CARBONIZING.

Here is a partial list of the late-model items included:

D & F Rag Pickers, 1949-1950
Campbellford Rayon Bale Opener
Clark Lumper, 1949
Sargent Cone Duster
Morton Stainless Steel Raw Stock Dye Kettles, 1946
Morton 1,000# Stock Dye Kettle, 1943
Sargent Pneumatic Raw Stock Squeeze Rolls and 9-section Dryer Unit, 1945
Fletcher 60" Centrifugal Extractor M.D.
Sargent 60" Mixing Pickers, 1946
D & F Fearnaught Picker,1941
Truslow Blenders, 1947
Lummus Double Box Bale Press, 1945
24" Sample Card, 1947
Soutex Woolen Cards 60x48 dia. Broadbands and Tapes
Peralta Rolls, 1948
Whitin 120-spindle Model E Ring Frames, 1941-5
J & B Giant Package Mules, 1937
Whitin Schweiter Winders, 1941-3
Uni Model 80GF Cone Winders
Warp Compressor Dresser Spoolers
D & F Pinless Dressing
Massagino Creels, 1948
C & K 82" Model W-3 Looms, 1935-44
C & K 82" Model W-3 Automatic Looms, 1935
C & K 78" Model W-2 Automatic Looms, 1934
Barber Colman Model K Warp Tying Machine
Rodney Hunt Cloth Soaper, 1948
R & L Model 66 Fulling Mills, 1942-6
J. Hunter Model 283 Fulling Mill
Rodney Hunt 8' Cloth Washer
R & L 6' Cloth Washers, 1942-6
R & L 72" Pneumatic Squeeze Rolls, 1942
Birch Ceiling Scutcher, 1942
P & W 72" Semi-Decater, 1945
Kenyon 8-pass Cloth Dryer
Woonsocket 90" x 36-roll Double Acting Napper, 1944
B. S. Roy Napper Grinder
David Gessner Heavy Duty Rotary Cloth Press with Hydrolizer Unit, 1945
P & W Doubling, Measuring & Winding Machine, 1945
Windle Open Width Cloth Winding Machine, 1942
Toledo Cloth Scales, 1948
J. Hunter and Morton Stainless Piece Dye Kettles, 1945-50
Morton Sample Piece Dye Kettle, 1950
J. Hunter Complete Cloth Carbonizing Range for 78" Goods, 1945
Rodney Hunt Dry Fulling Mill, 1945
Birch Power Cloth Inspection Perches, 1944
Saco-Lowell #6 Air Filter, 1948
American Moistening Atomizer Head Type Humidification System throughout plant

MISCELLANEOUS

Kitson 2-cylinder Hard Waste Picker
Saco-Lowell 2-cylinder Cotton Type Slasher
Whitin Bale Breaker
Economy Bale Press M.D.
Whitin Twister
Stock Blowing Systems
Electric Water Coolers
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9½ Automatic Wool Filling Bobbins
65" Card Spools—Aluminum Barrels
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56 C & K 4x1 56" R. S.
4 C & K 110" R. S. 4x4
2 C & K 100" R. S. 4x4
12 C & K 92" R. S. 4x1 Automatic
24 C & K 4x1 Automatic 47" R.S.
18 C & K 4x1 Automatic 82" R.S.
56 Draper Automatic 47" R.S.
5 C & K 4x4 82" R.S.

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1 Jastrom fabric conditioner 64"
1 14 can Butterworth dryer 142"
1 21 can Butterworth dryer 72"
1 Textile Tester Frame 52" wide 40' long
1 Butterworth T.F. 80'
4 Three (3) Roll Padders 45"
30 50" Dry Cans
1 Birch Bros. Scutcher & Vacuum 60"

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1—93 Reeves Drive, Plain Bearings
1—4'30' Enclosed Reeves Drive
1—100" Swing Folder
1—25 HP Angle Drive Steam Engine
1—Rack, Dryer, 7 Copper Cans Tinned 30" Diam. x 40" wide
1—40" 3 Roll Watermangle, 2 Husk 1 Brass Rolls
1—52" Single Roll Batcher
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2—St. Steel Lined Jigs 50" Wide
1—Stainless Steel Self-Supporting Jig 60" Wide
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1—60" Medium Hard Rubber Roll
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1—36" Hydro Extractor, Hercules with Motor 220 V. 3-60 Brass Basket.
1—Bushnell Baling Press 51" x 30" x 60" High
1—1 H.P. El. Hoist 550 V. 3 P.H. 60 cycles

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Gregg Finishing Plant

(Continued from page 121)

weather before it is circulated throughout the plant.

Chemical-Mixing System Uses Gravity Flow

While the plant basically is of single-floor construction, it is on three levels because of the ground slope. All processing is on the main finishing floor; the chemical-mixing room is on the mezzanine; and receiving and shipping is on a level below the cloth rooms.

The chemical-mixing room is a good example of advanced planning. The dyes and chemicals are fed to the machines by gravity flow, and ease of operations is apparent. The room is well lighted with fluorescent fixtures arranged to eliminate, as much as possible, shadows on equipment in the working areas; and to concentrate light beams over machinery and equipment where they are most needed. Natural light is provided from windows on three sides of the room.

The floors are made of acid-proof brick, which is easy to clean and is not slippery.

All tanks are platform-mounted along the walls with as few pipe connections showing as possible. Working areas around the tanks are adequate and provide freedom of movement. The stainless-steel tanks have enclosed motor-driven agitators and other modern equipment.

Tanks are so connected that they feed directly to the specific dyeing and finishing machines. However, if one tank is taken out of service, a system of valves will permit shifting of supply tanks to serve any particular finishing-room equipment.

Water Supply Is Plentiful

A plentiful supply of water is a prime requisite of a dyeing and finishing plant, and the Gregg plant should never want for an adequate supply. Graniteville Co. has about 15,000 acres of timberland to protect its watershed. An inexhaustible source of water is obtained from its three lakes, which supply soft water practically free of mineral content. The Gregg plant uses 3,900,000 gal. of water per day.

A feature of its water supply is the heating system. Hot and cold waste water are kept separate, and the hot waste goes through heat exchangers to heat the incoming water. This phase of the planning effects considerable economy and efficiency.

Quality Is Closely Controlled

Quality control is constantly prac-

(Continued on page 294)

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BOILER UNIT

Complete 40 horsepower, oil fired boiler unit for sale, reasonable price. The equipment is entirely automatic, not requiring fireman. To be sold as a complete unit. This boiler is currently in operation and can be seen by prospective customer. It is approximately three years old and is being replaced by a larger unit due to expansion.

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24—60" Reedspace C&K 4x1 Looms. 20 Harness Dobby. Side Center Filling Motion. Plain Bearing. 2 shift pick counters, individually motor driven.

C&K 2x1 54" Reedspace COMPLETELY REBUILT LOOMS. Roller Bearing, shock absorber, heavy bar, individually motor driven. 20 harness dobby.

13—C&K 2x1 50" Reedspace oversize shuttle box, individually motor driven. 20 hook double index dobbys, 2 shift pick clocks, 1½ beams per loom.

28—C&K 2x1 52" Reedspace, oversize shuttle box, individually motor driven. 20 hook double index dobbys. 2 shift pick clocks, 1½ beams per loom.

5—C&K Heavy Wool type 2x2 Looms, 88" between layswords with 1½"x 2¼" shuttle boxes. individually motor driven and extended bottom shaft to operate Jacquard Machine.

1—30 Spindle Lassenby Model D-Jr. Cop Winder. Machine was installed in 1945. It is built with Roller Trumpets. Spindles to wind paper ribbon to cops 1⅛" dia. x 10".

C&K 4x1, 54" Reedspace COMPLETELY REBUILT Looms, with multiplier, roller bearing, shock absorber, heavy bar, individually motor driven, 20 harness dobby.

24—60" Reedspace C&K Plain looms. 20 harness double index dobby, plain bearings, 2 shift pick counters, motor driven.

2—20 Spindle Oswald Lever Back Winders.

4—2600 Hook Jacquard Machines—only

10—800 Hook Jacquard Machines.

20—#90 Universal Quillers and Coppers with and without bunchbuilders, excellent condition.

2—Measuring Machines 40" and 58" goods.

8 Yard Sipp Warpers 53" and 72"

Skein Winders, 60, 80, 100 spindles.

11—½ H.P. 220 Volt, 60 cycle, 3 phase 1800 R.P.M. General Electric Motors

47—½ H.P. 220 Volt, 60 cycle, 2 phase 1800 R.P.M. General Electric Motors

9—½ H.P. 220 Volt, 60 cycle, 3 phase 1800 R.P.M. General Electric Motors

4—½ H.P. 440 Volt, 60 cycle, 3 phase 1800 R.P.M. Rewound Motors

6—½ H.P. 550 Volt, 60 cycle, 3 phase 1800 R.P.M. General Electric Motors

17—¾ H.P. 220 Volt, 60 cycle, 3 phase 1200 R.P.M. New Tri-Clad General Electric Motors.

3—¾ H.P. 440 Volt, 60 cycle, 3 phase 1800 R.P.M. Rewound Motors

37—1¼ H.P. 550 Volt, 60 cycle, 3 phase, 1800 R.P.M. General Electric Motors

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1—48" Tolhurst Cop. Bask. Extractor
1—5 Can Finishing Mach. Textile 38" Face & 20" Dia.
5—Offermann Prince Smith 3 Head Gill Boxes & Creels
1—Silver Whitin Lap Mach. 32 Ends
1—Ribbon Whitin Lap Mach. 9" Lap.
2—Mules, 336 Sp. 2¼" Ga. D&F
1—36 Roll 82" Woonsocket Napper
1—66" C&M Dble. Bed Press
1—2 Bowl Scouring Mach. Skeins
1—45" Parks & Woolson Shear
1—66½" Parks & Woolson Shear
1—8 Cyl. Johnson Slasher, 66" 3/80/550V Mtr.
1—Cameron Slitter—K100
1—Slitter, Multiple Circular Knives
2—D&F Spinning Frames, Model E, 120 Sp. ea.
1—Fully Auto. Links & Links 44" 8 Ga. Greaser Mach.
1—160 Sp. Collins Twister, 3½" R
1—Sipp Eastwood 84" Warper
1—Eastwood Horiz. Warper 600 End Creel
1—40" High Speed Saco Lowell Warp.
2—Cocker Warper Heads 1941-43 for 30" Beam Heads 54¼"
2—Entwistle High Speed Warpers Individual Mtr. Driven, Elec. Stop Motion in Creel
1—Cocker High Speed Warper 624 End Magazine Creel
1—Model #102 Foster Winder
3—Abbott Traveling Cone Winders, 80 Sp. ea.
1—Sipp 84 Sp. Winder complete with swifts, mtr. driven
4—Foster #101 Winders, 180 Sps. ea. Twin Mtr. Drive

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SEND FOR OUR LARGE LIST OF DRAPER MODEL E, K AND MODIFIED "D" FROM 40" CLOTH TO 78" CLOTH AND C&K AUTO. AND NON-AUTO. FROM 45" CLOTH TO 120" CLOTH" ALSO NARROW FABRIC AND WOVEN LABEL LOOMS.

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Specializing in Export & Domestic Production Machinery
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REBUILT MACHINERY FOR IMMEDIATE DELIVERY

2—W.J. Tenter Frames 30' x 54"
1—W.J. Tenter Frames, 30' x 96"
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1—50'x90" Butterworth Pin Tenter Frame.
1—Knaap Narrow Fabric Warper.
2—150 gal. Jacketed Kettles with agitators.
One Set of 21-72" Dry Cans Horizontally.
2—54" General enclosed gear S. S. lined Dye Jiggs.
1—Set of 9—30" x 60" Heavy Steel Dry Cans.
1—Set of 7 copper cans, horizontal, Reeves & motor.
1—50" V. V. Button Breaker.
1—48" Tolhurst Centrifugal Self Balancing Extractor, with motor on side.
1—64" Van Vlaanderen motor driven Tuber.
1—54" King & Gerber embossing calender, M.D.
1—60" V. V. M.D. Horizontal Extractor.
2—40" motor driven Beamers.
8—Herman measuring & inspecting machines tube to tube.
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1—40" Measuring, Inspecting & Tubing Machine, tube to tube, new, variable speed, forward, neutral & reverse.
30-60 gallon copper steam jacketed Kettles.
1—36" Herman Measuring & Inspecting Machine.
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1—Sterling 7½ H. P. Vari-drive.
1—Reeves 7½ H. P. Vari-drive.
About 5,000 S. S. high speed V. V. Clips.
Agitators of various sizes.
Motors of various sizes.
New & Used Electric Hoists.

56 Model-K automatic draper looms, 47½ reed space Practically New.
2-3 ft. 2-8' 1-10' 1-14' Stainless Steel Lined Dye Boxes

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DOMESTIC — EXPORT
TEXTILE MACHINERY
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STOCK READY FOR IMMEDIATE DELIVERY

48—Deliveries Saco-Lowell Drawing, 6 del. per frame, metallic rolls.
17—Deliveries Whitin Model F Drawing, common rolls.
1—Hetherington Ribbon Lap Machine.
1—Hetherington Silver Lap Machine.
1—Saco-Lowell Vertical Opener, 1922 Model with gallows drive.
3—#7 Kitson Buckley sections.
8—40" Kitson Finisher Pickers, 16" Kerschner beaters, 4 lap doubling aprons.

. . . Partial Listing—Let us know your needs . . .

WILSON LEWITH MACHINERY CORP.
Post Office Box 4100 — Phone 4-2403 — *Warehouse: Wilkinson Blvd.* Behind Barbeque Lodge
CHARLOTTE, N. C.

(Continued from page 292)

ticed through every process operation. While automatic controls are in every part of the finishing plant, laboratory tests are made periodically. Continuous color-shade control is maintained in a testing department which is fitted with both fluorescent and Macbeth daylight units.

An important adjunct to the Gregg plant is the complete research and development laboratory which serves all of the Graniteville mills. The laboratory is known as the SAGE Research and Development Laboratory and derives its name from the first letter of the five cotton mills, Sibley, Augusta, Graniteville, and Enterprise.

So complete is this laboratory that the government, during and since World War II, has made wide use of its physical and chemical divisions. With such complete facilities, Gregg can perfect on a plant production basis many new ideas developed in the pilot plant of the laboratory.

The pilot plant is one reason why Gregg has been able to develop many special machines and innovations on standard types.

Safety Has Top Consideration

Along with these innovations and perfection of machinery for more efficient operations, Gregg has not overlooked safety and the comfort of the 550 employees. Safety was one of the main factors in the design of the plant. Shields and guards have been placed over all equipment where accidents would be likely to occur.

All drives and gears are safety-guarded. At every point where chemicals are used, rubber gloves, safety goggles, aprons, and other equipment have been supplied to employees. Their use is mandatory and part of the safety program which is constantly in force.

The same degree of care and advance planning which went into the main portion of the finishing plant is reflected in the warehouse, where adequate facilities and materials-handling equipment are provided. Along the east side of the warehouse is a 604-ft. receiving and shipping platform with railroad siding. The tracks are at ground level, so that the area can be used also by trucks and trailers. The warehouse includes sections for chemicals, gray goods, machine supplies, and finished goods awaiting shipment. There is an entry door to each section of the warehouse.

Odorant Sprayed in Working Areas

Another innovation is the use of a pleasant odorant in the water going into the evaporative-cooling system in-

(Continued on page 296)

Immediate Delivery–Partial Listing

1—3 roll 60" Calender, B.B., 10 Ton Pneumatic Pressure.

1—3 roll 70" Calender, Ball Bearing, Motor.

1—V.V. 50" Semi-Decator, Pump & Motor.

1—V.V. 60" x 30' Tenter Frame, S.S. clips.

1—Hennekins 66" Boil off, continuous, late type.

1—V.V. 66" x 60" Palmer-Quetch unit.

2—R.B.&F. 4 color & 5 color, 60" Print machines.

1—R.B.&F. 1 color 50" Print machine.

1—Verduin 50" Hydraulic Padder, 2 rubber rolls.

1—V.V. 60" Padder, 2 rubber rolls, Motor & S.S. Tank.

1—2 roll 54" Silk Embossing Calender.

1—54" x 60" diameter Palmer, blanket and motor.

1—Kenyon Dryer, all automatic, late type.

1—8 Fan Loop Dryer, National, rev. sticks.

1—V.V. 66" Singer, 4 burners, Motors & Blower.

1—60" Coater, floating knife, rubber blanket.

1—set 21–50" x 23" diameter, Dry cans, copper.

1—set 15–75" x 23" diameter, Dry cans, copper.

1—Morrison 50" Button Breaker, B.B. rolls, enclosed gears.

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WHITIN QUILLER—MODEL J

304 Spindle

3½" Gauge—10½" Traverse

ITEM 13046

4 BALL WARPERS

Making standard 36" ball warp

ITEM 12166

2 YARN WARP COILERS

Ceiling type

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TERRELL STRIPPER

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Automatic Quill Winder, 80-Spindle, New, Original Cases.

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Tel: 4-9434

WANTED
(Continued from page 286)

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WE WILL PAY HIGHEST PRICE FOR YOUR SURPLUS TEXTILE MACHINERY, BOBBINS, FIBRE HEAD SPOOLS, QUILLS, AND YARNS—SEND US YOUR LISTINGS

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8 STRING STAINLESS STEEL COMBINATION DYE KETTLE AND WASHER
P. O. Box 208 West Warwick, R. I.

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30 spindle Lazenby Cop Winder and 80 or 100 spindle Foster Model #12 skein to cone winder.
W-8938, Textile World
330 W. 42 St., New York 18, N. Y.

WANTED
RIBBERS
3" 8-10 cut. 4 ¾" 10 cut. 5" 8-9 cut. 6" 8 cut.
ROL-PAK CO.
532 S. Marengo Ave. Alhambra, Calif.

2—8 LOOMS WANTED
C & K, C type, 2 x 1 or 4 x 1, 90"—96" between swords, must be recent, shuttle changing automatic with 8" or 8½" crank shaft sweep.
W-8778, Textile World
330 W. 42 St., New York 18, N. Y.

WANTED
PLUSH LOOMS
60" WIDE
Good running condition for weaving cotton velour.
Box 400, Realservice,
110 W. 34th St., N.Y.C.

(Continued from page 294)

stalled in the inspection and packing department.

In other departments, Gregg has gone to great lengths to remove all odors from the processing areas; but in this department, pine-oil emulsion is sprayed into the working area by the cooling system. Not only does the air in the working area smell fresh, but the pine-oil emulsion imparts the pleasant odor to all goods being conditioned.

Building Allows for Expansion

The 604x275-ft. building has about 215,743 sq. ft. of usable space, and was designed around the present layout of the plant machinery and equipment, with space allowed for future expansion. Into it went facilities for the personal comfort of employees in showers, rest rooms, and modern sanitary facilities.

Glazed tile is used to present a pleasant color scheme and for cleanliness. The wainscoating is mahogany color; and above that, to the ceiling, the wall is cream-colored tile. Around the base of the tile, 12 in. above the floor, is a 2½-in. steel-pipe guard rail to prevent push trucks from hitting the tile and causing possible injury.

In designing the building, roof, trusses, and columns, the idea was to provide wide working bays and plenty of space around machinery and equipment. Columns are spaced 20 ft. apart north-south and 60 ft. apart east-west. All overhead piping and steel work is painted a cream color to match the tile wall.

Operation of all machinery is by direct drive; the purchased alternating current is converted into direct current for infinite speed control.

Construction of the plant started January 1, 1949; and by late September, the building was sufficiently advanced for some machinery to be installed. By March 29, 1950, the plant was in full operation; and it was dedicated May 2, 1950, with many prominent figures attending the ceremonies.

Guiding the planning, machinery layout, and design of the new plant were Pres. Samuel H. Swint; Vice Pres. F. A. Townsend; J. Everett Brown, general superintendent of dyeing and finishing; Henry Woodhead, engineer; and G. H. Vandervoort, maintenance superintendent.

Graniteville produces drills, twills, poplins, jeans, ducks, flannels, sateens, tickings, coverts, teal cloth, and hickory stripes. The Gregg plant will finish the major part of the production of the six Graniteville mills. In addition, it will do job finishing for outside customers.

38 ATWOOD D. Deck Standard TWISTERS—Motorized

Individually motorized, 3 phase, 220 volts, 60 cycles. Machines 4¼" spindle spacing—Machines 192, 228, 260 spindles each. All in excellent operating condition.

9 U.S. TEXTILE D. DECK 2 MOTORS TWISTERS 212 SPINDLES EACH

Asmo Type, 1935 model, 4¼" spindle spacing machines in top notch condition.

77 ATWOOD 5-B DOUBLERS MOTORIZED 80 & 100 SPINDLE 4" & 5" SPINDLE SPACING

5 ATWOOD 12 OZ. PACKAGE 5-B DOUBLERS-6" GAUGE—84 MOTORIZED SPINDLES EACH

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★ 1,000 MOTORS ★
WESTERN ELECTRIC
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For Narrow Fabric Trade Complete with Brown Instrument Panels

STAINLESS STEEL Lot 166, 30,000
TEAMING Head 4½" Trav. 3⅛"
HAFTS Barrel 1⅛"
Hollow Gudgeons

26 C & K GEM HEAD 4x4 LOOMS . . .

16—72" wide 10—56" wide—Motorized
Heavy Duty Roller Bearing Looms, Elec. Feeler & Warp Stop Motions, in Excellent Condition—Looms Equip. with Beams—

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1—60" x 60" Tenter Frame, S. S. Clips, P. S. Housing
1—3-Roll 54" Calendar
1—54" Kenyon Pin Dryer, 3-tier-10 passes, Fin Heaters, automatic openers, electric eye guide, Vari Motor Drive
1—60" Floating Knife Coater
1—60" Single Color Print Machine
1—90"-4 Burner Singer, V. V. with cooling cylinders and brushes
1—72" x 70'-3-tier Pin Dryer, automatic opener 10 passes
1—50" Simpson Winder
1—62" New Beamer
1—90" Morrison Padder
1—4-Roll 41" Calender, K. & G.
1—72" Fletcher Extractor Rubber Lined
1—40" & 1—20" Extractors, Copper Baskets
1—90" E. & H. Flat Folder
1—48" Herman Inspection & Measuring Machine
1—48" Hennekins Examining Machine
1—60" Park Woolson Single Blade Shear
1—50" Morrison Button Breaker
1—Set 16 Copper Dry Cans 90"

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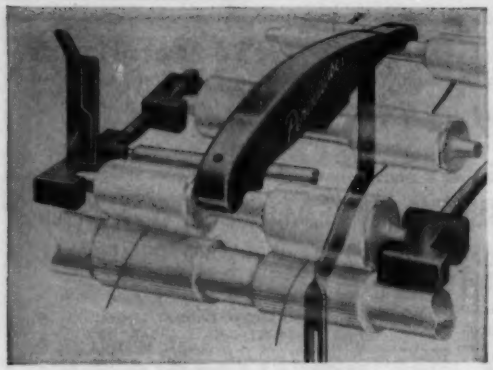

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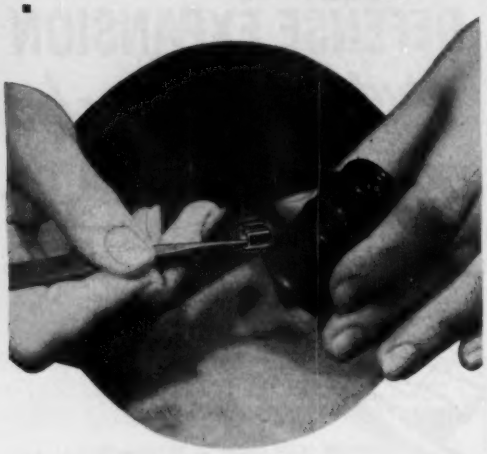

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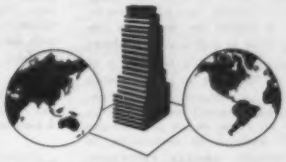
TEXTILE WORLD

MARCH • 1951

International Supplement



▸ Brief Summaries in Spanish, French, and German of the Major Feature Articles in This Month's Issue

Español

Hemos añadido este suplemento a la edición completa de TEXTILE WORLD de los Estados Unidos en beneficio de nuestros estimados lectores del extranjero. En las columnas siguientes encontrará usted información sobre los artículos importantes que aparecen en las páginas de este número – información que puede ayudarle a aquilatar cada uno de los artículos originales sacándoles mayor provecho en su uso individual.

TEXTILE WORLD espera que estas traducciones breves, al idioma que es más familiar para usted, le sirvan de guía para decidir usted mismo cuáles artículos le conviene traducir por su propia cuenta, dado su interés especial en las diferentes fases de nuestra gran industria textilera mundial. Esas traducciones serán de gran valor práctico para aquellas personas de su organización que tengan dificultades con la terminología de tejidos del idioma inglés.

Véase la página 3 de las hojas corrientes de este número para la relación completa del contenido en inglés.

Página 103

Perspectiva Textilera de Puerto Rico. La redacción de TEXTILE WORLD ha estado observando con interés el desarrollo de la industria textilera en Puerto Rico. Durante varios años se ha tratado de inducir a las firmas textileras americanas para establecer plantas sucursales en Puerto Rico. Las ventajas y desventajas del montaje de una fábrica en la isla son numerosas. Este documentado informe proporciona detalles de las operaciones de cuatro firmas americanas establecidas allí.

Página 119

Observación de Cabos de Hilatura Rotos. El método de verificación de los cabos de hilatura rotos que bosqueja este artículo es un buen barómetro para observar las condiciones de corrida en el salón de hilatura. Para hacer estas verificaciones no se necesita personal entrenado especialmente. Los cálculos son sencillos y, aunque el método no tiene exactitud matemática, es lo bastante preciso para establecer una base de comparación entre las continuas de hilar de anillos, las fonturas, etc.

Français

Ce supplément a été ajouté à notre édition régulière américaine à l'intention de nos estimés clients d'outre-mer. Dans les colonnes qui suivent vous trouverez des renseignements concernant les articles principaux de ce numéro, renseignements qui vous permettront de juger de l'intérêt que ces articles peuvent avoir dans votre cas particulier.

TEXTILE WORLD espère que ces résumés présentés dans une langue qui vous est plus familière vous permettront de décider quels sont les articles qui vous intéressent suffisamment pour que vous les fassiez traduire plus en long par un traducteur de votre ville. Ces traductions seraient utiles aux membres de votre firme non familiarisés avec la terminologie anglaise de l'industrie textile.

Consultez aussi la Table des Matières, page 3 de ce numéro.

Page 103

Situation du Textile Porto-Ricain. Les éditeurs de TEXTILE WORLD ont suivi avec intérêt le développement de l'industrie textile à Porto-Rico. Au cours de ces dernières années de nombreux encouragements ont été offerts à l'industrie américaine pour installer des usines à Porto-Rico. Nombreux sont les avantages et les inconvénients d'une telle installation. L'article donne des détails sur le fonctionnement de quatre usines américaines qui se sont installées dans l'île.

Page 119

Contrôle de fils rompus. La méthode de contrôle décrite dans cet article, concernant les fils rompus en filature, constitue un bon indicateur des conditions générales de fabrication dans la salle de filature. Aucun entraînement spécial n'est requis de la part du personnel. Les calculs sont faciles et quoique le système ne soit pas d'une exactitude mathématique, il est cependant suffisamment précis pour constituer une base de comparaison entre les différents métiers et les différents groupes.

Page 120

Nouvelles usines de teinture et d'apprêt. La nouvelle usine Gregg de teinture et d'apprêt construite à Grani-

Deutsch

Diese Beilage wurde der vollstaendigen Vereinigten Staaten Ausgabe der TEXTILE WORLD zur Erleichterung fuer unsere geschaetzten Leser in Uebersee zugefuegt. In den nachfolgenden Spalten werden Sie von den wichtigsten Fachaufsaetzen, die in diesem Heft erscheinen, in Kenntnis gesetzt, um Ihnen in der Auswahl der Original Aufsaetze, die fuer Sie von besonderen Interesse sind, behilflich zu sein.

Die TEXTILE WORLD hofft, dass Sie sich durch diese kurzen Uebersetzungen in eine Sprache mit der Sie vielleicht mehr vertraut sind, veranlasst fuehlen, Fachaufsaetze, die von besonderen Interesse auf dem Gebiet der grossen und weltumspannenden Textil Industrie sind, bei lokalen Uebersetzern ausarbeiten zu lassen. Solche Uebersetzungen waeren von praktischem Wert fuer diejenigen in Ihrem Unternehmen, die Schwierigkeiten mit englischen Fachausdruecken haben.

Siehe Seite 3 der Original Ausgabe fuer das vollstaendige Inhaltsverzeichnis in englischer Sprache.

Seite 103

Bericht ueber die Textilindustrie in Puerto-Rico. Die Redakteure der "Textile World" haben mit Interesse die Entwicklung der Textilindustrie in Puerto-Rico verfolgt. Seit einigen Jahren versucht man amerikanische Textilunternehmen zu bewegen, Zweigfabriken in Puerto-Rico zu errichten. Die Vor- und Nachteile der Fabrikeinrichtung auf der Insel sind zahlreich. Auswirkung der Taetigkeit von 4 amerikanischen Firmen wird in diesem Tatsachenbericht detailliert angefuehrt.

Seite 119

Kontrolle. Die in diesem Artikel beschriebene Methode zur Kontrolle von Fadenbruechen, dient als Massstab zur Beobachtung der Arbeitsweise im Spinnsaal. Diese Kontrolle erfordert kein speziell geschultes Personal. Berechnungen sind einfach und – obzwar sie mathematisch nicht genau sind – genuegen sie als Vergleichsbasis zwischen Spinnmaschinen, Unterabteilungen, etc.

Página 120

Nueva Tintorería y Acabadoría. La nueva planta de teñidura y acabado de la Gregg, que costo $10.000.000, en Graniteville, S.C., ha sido construída de acero y ladrillos. Los pisos son de ladrillos a prueba de ácidos, y las características de distribución aceleran la producción. Toda la teñidura y el acabado se hace por un procedimiento continuo. Se ha graduado el equipo convencional para producir un rendimiento continuo en lugar de un proceso por lotes. El sistema de ventilación de aire comprende capotas extractoras sobre todas las máquinas y conductos ventiladores en todas las secciones de trabajo.

Página 122

Incentivos de Jornales. En una fábrica de medias del sur de los E.U.A. se ha aumentado la producción de primera calidad del 87 al 95 por ciento en los tres años en que ha estado vigente un plan de bonificación a los empleados. Si una tejedora, por ejemplo, supera la producción normal, siempre que su porcentaje de segunda esté dentro de los límites, recibe el jornal de tarifa a destajo más una bonificación por la producción adicional. Un descenso en la producción extra o en el porcentaje de trabajo de primera calidad reduce el montante de la bonificación. Las bonificaciones de las fijadoras se basan en el rendimiento de las operarias de máquinas de su sección.

Página 124

Modernos Encoladores con Cilindro de Vapor. Las nuevas encoladoras de urdimbres de una fábrica de la Carolina del Sur caracterizan controles automáticos y manipulación mecánica. Las cuatro encoladoras de tres cilindros están provistas de capotas y conductos aspirantes para extraer el aire húmedo para aumentar la eficiencia de la encoladora y hacer más confortable la temperatura del salón. La velocidad es regulada de acuerdo con los requisitos del secado por medio de dispositivos Brown Moist-O-Graphs utilizándose propulsiones de multimotor.

Página 126

Teñidura de Corona de Rayón. La teñidura del hilo de rayón en forma de corona o rodete es más barata que en forma de madeja, según un estudio reciente. El costo de colorantes, productos químicos y vapor es casi igual en ambos casos. En la teñidura de madejas hay los ahorros siguientes: mano de obra, 2 cts. por libra de hilo; inversión de capital en maquinaria teñidora, 2/3 cts. por libra; y teñidura, 2/3 cts. por libra—un total de 3-1/3 cts. En la teñidura de coronas, se ahorran 5 cts. por libra en el costo del hilo y 10 cts. por libra en el devanado—un total de 15 cts. por libra.

Página 128

Hilatura de Alma para Hilos Doblados. La hilatura de alma consiste en pasar un hilo ("alma") pequeño y fuerte a través de los rodillos delanteros de la continua de hilar con el hilo que se teje. Los dos hilos son torcidos para formar uno solo y se enrolla en la canilla. El hilo de hilatura cubre el hilo del alma. Las ventajas principales del procedimiento son: producción más rápida, posible ahorro en el costo del hilo (particularmente del estambre) y

teville, dans la Caroline du Sud à un coût de $10 millions est en fer et en briques. Les planchers sont en briques resistant aux acides et la disposition générale de l'usine prévoit une fabrication "en ligne droite". Toutes les opérations de teinture et de finissage sont faites par procédés continus. Le matériel habituel a été installé de façon à travailler en continu et non pas en lots individuels. Des hottes et des conduites d'épuisement sont placés à tous les endroits stratégiques.

Page 122

Salaires-prime. La production d'articles de premier choix a passé de 87% à 95% dans les trois ans qu'une usine du Sud a introduit un système de prime à la qualité. Si une ouvrière dépasse la production de base, elle recoit en plus de son salaire à la pièce une prime additionnelle, pour autant toutefois que sa production de second choix ne dépasse pas la norme. Une diminution dans la production supplémentaire ou de celle de produits de premier choix réduit la prime. La prime des metteurs au point est basée sur la production des ouvriers de leur division.

Page 124

Encelleuses modernes. Une usine de la Caroline du Sud possède de nouvelles encelleuses avec contrôles et manutention automatiques. Les quatre encelleuses de trois cylindres sont munies de hottes et d'une tuyauterie pour l'épuisement de l'air humide, résultant en une augmentation de rendement et des conditions de travail plus confortables. La vitesse des encelleuses est réglée selon le degré de séchage désiré par Moist-O-Graphs Brown et moteurs à vitesse variable.

Page 126

Teinture en masse ou gâteau. La teinture de la rayonne en masse ou gâteau sortant du pot de la fileuse de rayonne revient moins cher que la teinture en écheveau, comme le démontrent des recherches récentes. Dans les deux cas le coût des matières colorantes, des produits chimiques, et de la vapeur sont à peu près les mêmes. Dans la teinture d'écheveaux on trouve les économies suivantes: main-d'oeuvre, 2 cents par lb. (livre anglaise); investissement de capital en machines de teinturerie, 2/3 cent par lb.; séchage, 2/3 cent par lb.—Total: 3 1/3 cents. Dans la teinture de la soie sortant du pot de filature (gâteau) les économies réalisables sont les suivantes: économie dans le prix de revient du fil, 5 cents; et dans celui du moulinage, 10 cents. Soit au total: 15 cents par lb.

Page 128

Ames de fils doublés. Le filage avec âmes consiste à faire passer un fil résistant ("l'âme") par les rouleaux de devant du métier au moment du doublage. Les deux fils sont doublés, ne formant qu'un, et enroulés sur la bobine. L'âme est entièrement recouverte. Le système présente les avantages suivants: augmentation de production, économie (spécialement pour le peigné), variété de fils et de tissus.

Page 130

Procédé pour rendre les articles en nylon ininflammable. Quand du ny-

Seite 120

Neue Faerberei und Appretur. Die neue Gregg $10,000,000.00 Faerberei und Appretur in Granitville, S. C., ist ein Stahl- und Ziegelbau. Die Fussboeden sind aus saeurefesten Ziegeln, und Faerben und Appretieren geschieht in einem fortlaufenden Produktionsprozess. Der Maschinenpark ist so installiert, dass er einen fortlaufenden Produktionsprozess gewaehrleistet. Das Lueftungssystem hat u.a. Exhausthauben ueber allen Maschinen und Lueftungsventile in allen Arbeitsraeumen.

Seite 122

Ansiferung fuer eine Lohnzulage. In einer Strumpffabrik im Sueden, wurde seit Einfuehrung des Praemiensystems waehrend der letzten 3 Jahre, die Erzeugung von Prima-Qualitaetsware von 87% auf 95% erhoeht. Wenn z. Bsp. ein Stricker die Standarderzeugung ueberschreitet, dann bekommt er einen Stuecklohn und eine Praemie fuer extra Produktion, vorausgesetzt, dass der Prozentsatz von Sekunde-Ware im Bereiche des Erlaubten ist. Eine Verminderung der Ueberproduktion, oder des Perzentsatzes von erstklassiger Arbeit, erniedrigt die Praemie. Praemien der Mechaniker haengen von der Leistung der Stricker oder Wirker in ihrer Abteilung ab.

Seite 124

Moderne Dampfzylinder Schaermaschine. In einer Fabrik in South Carolina haben die neuen Kettenschaermaschinen automatische Kontrollen und mechanische Handhabung. Die 4 Dreizylinder Kettenschaermaschinen sind mit Exhausthauben und Ventilen zur Feuchtluftentfernung versehen, um die Leistung der Kettenschaermaschinen zu erhoehen und um die Temperatur im Fabriksaal angenehmer zu halten. Geschwindigkeit wird in Uebereinstimmung mit der notwendigen Trockenbeschaffenheit durch den Brown Moist-O-Graph, mittels mehrfachen Motorenantrieb, kontrolliert.

Seite 126

Spinnkuchen Faerbung. Nach letzthin gemachten Studien ist das Faerben im Spinnkuchen billiger als Strangfaerben. Kosten fuer Farbstoff, Chemikalien, und Dampf sind fuer beide Arten so ziemlich dieselben. Strangfaerben ergibt folgende Ersparungen: Arbeitslohn, 2¢ per lb.; Kapitalsanlage fuer Faerbe-Apparate, 2/3¢ per lb.; und Trocknen, 2/3¢ per lb.; Gesammtersparnis, 3 1/3¢. Im Spinnkuchenfaerben ergeben sich Ersparnisse von 5¢ per lb. an Garnkosten und 10¢ per lb. im Spulen—insgesamt 15¢ per lb.

Seite 128

Grundfaden im Schlauchkopsspinnen fuer gefachtes Garn. Im Schlauchkopsspinnen laesst man einen duennen starken Faden (Seele) durch die Lieferzylinder der Ringspinnmaschine, auf welcher das Garn gesponnen wird, laufen. Die beiden Faeden werden zu einem gesponnen und auf die Huelsen gewickelt. Das gesponnene Garn umhuellt den Mittelfaden. Besondere Vorteile sind: Raschere Produktion, moegliche Ersparnisse an Garnkosten, (speziell bei Kammgarn) und Manigfaltigkeit in der Garn- und Stoffkonstruktion.

una variedad de hilos y construcción de telas.

Página 130

Haciendo Ininflamables los Telas de Nilón. Cuando se usa el nilón en conjunción con otras fibras (aún con fibras de vidrio) puede resistir la combustión aunque un tejido de 100% de nilón no la resista después de removerse la fuente de la llama. Se Se ha encontrado que la resina de tioureaformaldehido proporciona propiedades ininflamables duraderas a un tejido de esta clase. La resina es aplicada con una máquina "foulard". Después, el género es secado, curado a 280° F., y lavado.

Página 131

Obtención de Remalladoras Expertas. Un plan utilizado por una prominente fábrica de estambre para obtener remalladoras expertas comprende la aplicación de una prueba de destreza manual para la selección de solicitantes, y establece las normas para su elección y entrenamiento.

Página 132

Fijación Continua al Vapor de los Hilos. Originalmente se desarrolló para los hilos de algodón un procedimiento de tratamiento continuo de impregnación química, tensión, curación y secado para mejorar la resistencia, estabilidad y apariencia del hilo. En la actualidad el sistema está dando resultados notables con hilos sintéticos de todos los tipos, especialmente cuando se necesiten estabilidad y resistencia para usos industriales.

Página 134

Estudios de Tiempo en la Mecánica. Se ofrece una descripción de los dispositivos mecánicos usados en Suecia para registrar el tiempo de paro de las máquinas y sus causas. Se describe el uso de estos aparatos para regular los coeficientes y cargas de trabajo y para obtener otra información útil.

Página 137

Localización de Fábricas Nuevas. Una conferencia ofrecida ante la Sociedad de Ingenieros Mecánicos de los E.U.A. trató de los factores que comprende la localización de una nueva fábrica de tejidos: primero, la región; después, la localidad, y por último, una comunidad dada. El artículo ofrece detalles de todos los factores que deben tenerse en cuenta al darse cada paso.

Página 139

Hilo Peinado No. 100. En la actualidad se esta elaborando fibra de rayón, de 80 mm. de longitud y de 1 a 1-1/2 denier de tamaño, en un sistema francés del tipo de estambre, convirtiéndola en hilos No. 100 en más de una de las plantas de la Snia Viscosa en Italia. El artículo informa detalles del procedimiento.

Página 141

Vaporización Húmeda de Colores de Tina. Las principales dificultades del vaporizado húmedo de colores de tina se centralizan en el suministro de vapor y en el mecanismo de la cámara de vapor. Se puede corregir el condensado por medio de lumbreras adecuadas, vapor abundante, uso correcto de las empesas y buenos colectores del agua de condensación.

Page 130

Fireproofing Nylon Fabrics. When nylon is used in conjunction with other fibers (even glass fibers) it may retain combustion, even after the flame source is removed. Nylon, the cause of combustion once ignited, does not burn. A tissue can be rendered permanently fireproof by the application of a thiourea-formaldehyde resin. The resin is applied by padding, the tissue is then dried at 280 degrees Fahrenheit and rinsed.

Page 131

Système pour se procurer des rattisseurs. Une des principales usines de peigné du pays a un système pour juger de la dextérité manuelle des candidats pour les positions de rattisseurs. Des règles ont en outre été établies pour décider quels sont les candidats qualifiés. Le programme d'apprentissage est également bien au point.

Page 132

Traitement continu du fil. Un procédé continu de traitement chimique des fils par imprégnation, étirage, fixation et séchage afin d'en augmenter la résistance, la stabilité et l'apparence fut créé en son temps particulièrement pour les fils de coton. Ce système est actuellement employé aussi pour les fils synthétiques de tous genres et donne de bons résultats spécialement pour les fils employés pour des usages industriels.

Page 134

Chronométrage automatique. L'article décrit des appareils automatiques employés en Suède, pour enregistrer les temps d'arrêt des métiers et machines et leurs causes. Il donne également des renseignements sur l'emploi de ces appareils pour fixer les bases de salaires et les minimums de production.

Page 137

Emplacements pour nouvelles usines. Une étude présentée lors d'une assemblée de la Société Américaine des Ingénieurs Mécaniciens mentionne parmi les facteurs à considérer lors du choix d'un emplacement d'usine: en premier lieu la region, puis la localité, enfin la communauté. Chacun de ces éléments est analysé en détail.

Page 139

Fil peigné numéro 100. De la fibre de rayonne de 80 mm. de long en 1 et en 1 ½ denier est traitée sur du matériel de peigné du système français, dans plusieurs usines de la Snia Viscosa en Italie, produisant un fil peigné numéro 100. L'article énumère les détails techniques du procédé.

Page 141

Fixage des colorants à la cuve. Les difficultés principales rencontrées dans le fixage des colorants à la cuve proviennent de la production de la vapeur et de la chambre de vaporisage. On peut remédier aux eaux de condensation par des ouvertures de ventilation appropriées, un débit suffisant de vapeur, un emploi adéquat de doublures (backgrays). Il y a également lieu de veiller à l'emploi de bonnes soupapes pour eaux de condensation et à l'écoulement de ces eaux. Un bon réglage de tension pour les tissus imprimés entrant et sortant de la

Seite 130

Feuersicheres Nylonfabrikate. Wenn Nylon mit anderen Fasern (sogar Glasfasern) verwendet wird, kann es zu einem Brand kommen, obwohl ein 100%iges Nylonfabrikat nicht brennen sollte, sobald der Brandherd entfernt wurde. Thioureaformaldehyde Harze haben sich als anhaltend feuersicher bewaehrt. Das Harz wird in einer Impraegnierungsmaschine aufgetragen. Das Fabrikat wird getrocknet, bei 280° F gebacken und dann gewaschen.

Seite 131

Ausbildung von guten Ausnaeherinnen. Um erfahrene Ausnaeherinnen aufzunehmen, schreibt das Aufnahmegesuch einer angesehenen Kammgarnfabrik eine Handfertigkeits- und Geschicklichkeitspruefung vor, um die Auswahl unter den Stellungsuchenden zu treffen und schreibt auch die Richtlinien fuer ihre Auswahl und Schulung vor.

Seite 133

Ununterbrochenes "Stabilisieren" von Garnen. Ein fortlaufender Behandlungsprozess von chem. Impraegnierung, strecken, backen und trocknen wurde urspruenglich fuer Baumwollgarne entwickelt, um Garnstaerke, Stabilitaet und Aussehen zu verbessern. Jetzt erzielt das System beachtenswerte Resultate mit synthetischem Garn aller Typen, speziell, wenn fuer industrielle Zwecke Stabilitaet und Staerke gewuenscht wird.

Seite 134

Mechanische Zeitstudie. In Schweden gebraeuchliche mechanische Behelfe, welche die Stillstaende der Maschinen und deren Ursache registrieren, werden beschrieben. Gebrauchsanweisungen fuer diese Behelfe, bezueglich Errechnung von Lohnsaetzen und Arbeitslast, und andere wertvolle Informationen, werden erklaert.

Seite 137

Neue Fabrikbaugrunde. Der amerikanischen Gesellschaft der Maschinen Ingenieure wurde unlaengst ein Aufsatz unterbreitet, der sich mit den bei der Wahl des Baugrundes fuer eine Textilfabrik ins Auge zu fassender Faktoren befasst. Erst die Gegend, dann die Lage und schliesslich die spezielle Gemeinde. Alle, fuer jeden Schritt zu beruecksichtigten Faktoren, werden detailliert angefuehrt.

Seite 139

100er gekaemmtes Garn. Stapelfaserkunstseide, 80mm lang und 1-1½ Denier stark, wird auf einem franz. Kammgarnaehnlichen System verarbeitet und in 100er Garn, in mehr als einer der Snia Viscose-Fabriken in Italien ausgesponnen. Verarbeitungsmethoden werden detailliert erklaert.

Seite 141

Daempfen von Kueppenfarben. Die Hauptschwierigkeiten im Daempfen von Kueppenfarben konzentrieren sich auf Dampfzufuhr und Dampfkammermechanismus. Kondensierung kann durch adequate Luftloecher, genug Dampf, korrekten Gebrauch der Drosselklappe, guten Dampffallen und Abfluss korrigiert werden. Spannungsregulierung bei bedruckten Geweben beim Ein- und Auslauf aus der Dampfkammer verhindert

densación y desaguadero. La regulación de la tensión sobre los géneros estampados que entran y salen de la cámara de vapor evita la adhesión a los rodillos y el "amontonamiento" de telas.

Página 145

Defectos del Mecanismo de la Picada. Este artículo trata de las medidas tomadas por las Fábricas de Algodón Locke para evitar los defectos del mecanismo de la picada, ofreciendo también una relación de verificaciones de causas y remedios de los defectos de las telas. Se recomiendan tres medidas: (1) verificación de las cortadoras, cuchillas, rotenes, pulsadores, etc., o la instalación de cortadores de trama Stafford; (2) asegurarse de que todas las piezas que toque la trama sean lisas; y (3) comprobación del tiempo del telar, encajonado de lanzaderas y fuerza ejercida en la espada.

Página 147

Aumento de Eficiencia en la Costura. La base para el control de la producción y para la alta eficiencia de una fábrica de tejidos de Georgia son las unidades de pequeña producción, las cuales consisten en pequeños grupos de operarias y sus máquinas de coser. La fábrica tiene 412 máquinas de coser de 15 tipos y modelos diferentes, y produce una gran diversidad de piezas de vestir. Las costureras y fijadoras son entrenadas como especialistas en un tipo, marca, y modelo particular de máquina. Las unidades de producción son organizadas sobre la base de un grupo de máquinas similares.

Página 149

Hilos de Nilón para Usos Especiales. Las fábricas de tejidos de punto deben "proyectar" los hilos de nilón cortado para uso ulterior especial. Por ejemplo: la fibra de 3 denier por filamento puede proporcionar suavidad al toque, mientras que la fibra de 6 denier crea un efecto más encrespado. A menudo es posible obtener mayor estabilidad de hilo y cobosidad usando nilón de encrespado fijado. Debe eliminarse lo más posible la presión y las tensiones.

Página 151

Encogimiento de los Tejidos de Punto. El encogimiento potencial de la ropa interior de tejido de punto puede reducirse hasta en un 50% por la combinación de las condiciones correctas del tejido y acabado. La elección del número de hilos, pasadas por pulgada y la continua de calandro es muy importante. Los resultados de los ensayos muestran que una gran parte del encogimiento potencial ocurre en la operación misma del tejido de punto.

Página 153

Carga de Trabajo del Chapón de Carda. Un experimento interesante en una carda de algodón indica que un chapón se recarga de fibra antes de que llegue a la posición del décimo chapón y que continúa recogiendo basura hasta que sale de la cintra de carda. Bajo las condiciones normales usadas en el ensayo, la distribución de la fibra de todas las mermas de los chapones mostró la remoción aproximada del 65% de fibra y el 35% de basura.

chambre évitera qu'ils n'adhèrent aux rouleaux.

Page 145

Préventifs pour défauts de duitage. Les Tissages de Coton Locke prennent les mesures renseignées dans cet article pour éviter les défauts de duitage. Une liste renseigne les causes de défauts et leurs remèdes. Trois procédés sont particulièrement recommendés: (1) contrôle des couteaux, des arrêts, des tâteurs, etc. (2) s'assurer de ce que toutes les pièces mécaniques en contact avec la trame soient finement polies, (3) exactitude des diverses périodes du cycle, entrée exacte de la navette dans sa boîte et force du coup donné par le sabre.

Page 147

Augmentation dans le rendement à la couture. Une usine de tricotage de la Géorgie à créé un système de contrôle de la production et un degré d'efficacité remarquable grâce à un système de petits groupes de machines à coudre et d'ouvriers. L'usine emploie 412 machines à coudre de 15 classes et modèles différents et produit une grande variété d'articles. Les ouvrières et les régleurs reçoivent une formation qui les spécialise dans un genre et une classe particulière de machines. Les groupes de production sont organisés sur la base de machines de même type.

Page 149

Fils de Nylon pour usages spéciaux. Les fils faits de fibres de nylon pour tricotages devraient être produits et leurs caractéristiques de filature calculées pour chaque cas particulier. Par exemple une fibre de 3 deniers peut donner un effet moelleux tandis qu'une fibre de 6 deniers produira un effet plus dur. Il est souvent possible de produire un fil plus stable et plus "plein" en employant des fibres ondulées. Evitez les tensions et pressions dans toute la mesure du possible.

Page 151

Rétrécissement d'articles tricotés. Les causes occasionnant le rétrécissement peuvent être réduites de 50% par les soins apportés au tricotage et à l'apprêt. Le choix des numéros de fils, le nombre de rangées au pouce, et l'emploi d'un élargisseur approprié ont tous leur importance. Des essais ont démontré que la plupart des causes de rétrécissement sont introduites lors du tricotage même.

Page 153

Bourrage des chapeaux marchants de cardes. Une expérience intéressante a révélé qu'un chapeau marchant de carde est généralement bourré de fibres lorsqu'il atteint la position du dixième chapeau. Il continue à ramasser des déchets jusqu'à son dernier contact avec le grand tambour. Lors d'un essai fait dans des conditions standardisées l'examen des débourrages donna 65% de fibres et 35% d'impuretés avec une extraction totale de 3% du coton carde.

Kleben an den Walzen und Anhaeufen des Gewebes.

Seite 145

Verhueten von eingeklemmten Schussfaeden. Es werden Schritte angefuehrt, welche die LOCKE Baumwollfabriken unternehmen, um Einklemmen der Schussfaeden zu vermeiden, sowie eine Liste der Ursache der Stoffdefekte und deren Behebung gegeben. Die drei empfohlenen Schritte sind: (1) Kontrolle von Schneidevorrichtung, Messer, Knotenfaenger, Schusswaechter, etc. oder Installation einer Stafford Faedenabschneidevorrichtung. (2) Darauschen, dass alle, den Schussfaeden beruehrende Teile, glatt sind. (3) Kontrolle von Webstuhlgeschwindigkeit, Schuetzenkasten, und Kraftuebertragung des Schuetzenschlaegers. (Schlagarm)

Seite 147

Erhoehte Hoechleistung. Kleine Erzeugungs-Einheiten, bestehend aus kleinen Arbeitergruppen und Naehmaschinen, bilden die Grundlage zur Erzeugungskontrolle und hoher Leistungsfachigkeit in einer Strickfabrik in Georgia. Die Fabrik hat 412 Naehmaschinen von 15 verschiedenen Typen und Modellen und erzeugt die verschiedenartigsten Bekleidungsstuecke. Saeumer und Mechaniker werden als Spezialisten fuer eine bestimmte Type, Machart und Maschinenmodell, ausgebildet. Erzeugungseinheiten werden auf Grundlage einer Gruppe aehnlicher Maschinen zusammengesetzt.

Seite 149

Nylongarne fuer spezielle Verwendungs-Zwecke. Nylonstapelfasergarne sollen fuer spezielle Zwecke in der Strickwarenindustrie besonders vorbereitet werden. Z. Bsp., ein 3-Denier per Faden Stapel kann einen weichen Griff bekommen, waehrend 6-Denier Stapel einen sproederen Effekt ergibt. Es ist oftmals moeglich ein loseres und stabileres Garn durch gleichmaessige Kraeuselung zu erzielen. Druck und Zug sollen soweit als moeglich vermieden werden.

Seite 151

Einschrumpfen (Einlaufen) von Strickwaren. Gewaltiges Einlaufen von gestrickter Unterwaesche kann durch korrektes Stricken und richtiger Appretur um 50% herabgesetzt werden. Die Auswahl der richtigen Garnnummer Maschenanzahl per inch und der Kalandermaschine ist wichtig. Versuchsresultate ergaben, dass groessatenteils beachtenswertes Einschrumpfen durch den Strickprozess selbst hervorgerufen wurde.

Seite 153

Arbeitsbelastung der Deckel Karde (Baumwoll Karde). Ein interessanter Versuch auf einer Baumwoll Karde ergab, dass der wandernde Deckel, sobald er die Position des zehnten Deckels erreicht, mit Fasern voll gefuellt ist. Er nimmt andauernd Abfall auf bis er die Biegung verlaesst. Dieser Versuch unter Standard Bedingungen ergab, dass das Faser-Bild von allen Deckeln Strips 65% Fasern und 35% Abfall zeigte, bei einer durchschnittlichen ca. 3%igen Abfallentfernung von durchlaufenden Material.

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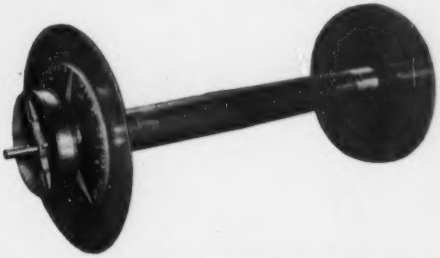

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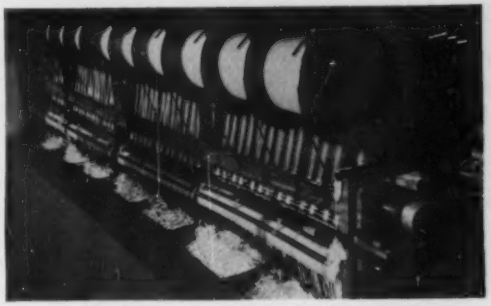

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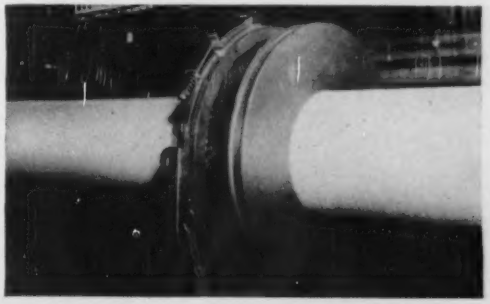

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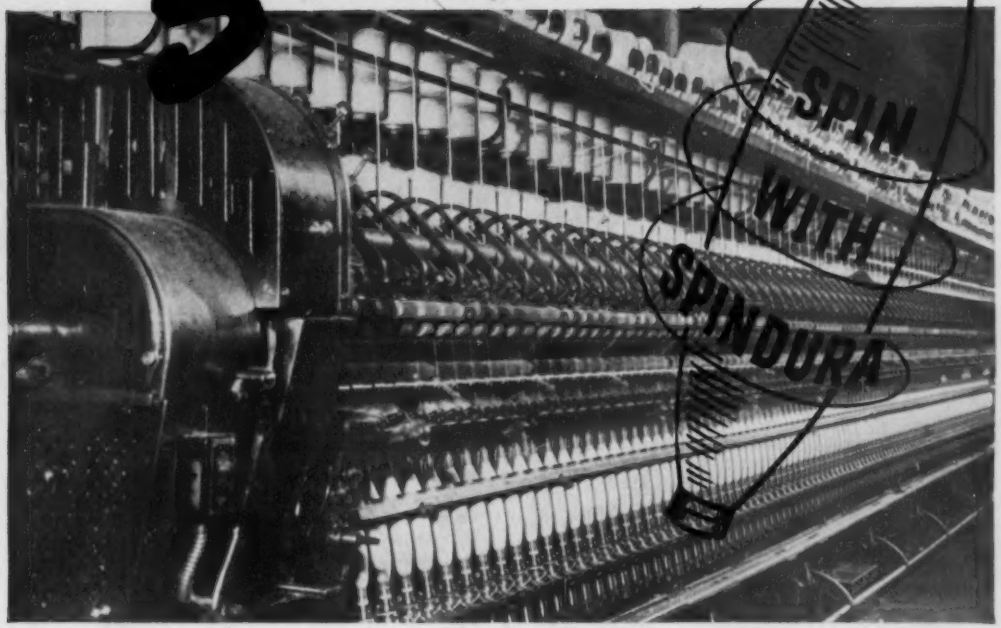

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